THE

DUBLIN QUARTERLY JOURNAL

OF

MEDICAL SCIENCE.

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NOTICES TO CORRESPONDENTS.

"37, Fitzwilliam-square, April 15th, 1865.

"SIR,—Since my publication in the *Quarterly Journal of Medical Science,* 'On the Surgical Treatment of Vesico-Vaginal Fistula,' Mr. M. H. Collis has furnished me with some particulars of the case of Mrs. Hill (the fourth mentioned by me), previous to her having consulted me, of which I was not then aware—as otherwise, I need hardly say, I should have felt pleasure in detailing them. This woman presented herself to Mr. Collis, in the latter end of 1860, with almost complete loss of the floor of the bladder, the gap admitting four fingers, and the case seeming almost a hopeless one. Mr. Collis, however, in three operations, succeeded in reducing this formidable chasm to the small opening which presented itself on my first seeing her, but which, nevertheless, I found much difficulty in closing. This interesting and successful case, in which Mr. Collis combined his own and Bozman's methods, will be found in his communication on the subject in the *Quarterly Journal of Medical Science* for May, 1861, page 314.

"I have the honour to be, Sir,

"Your obedient servant,

"AWLY BANON.

"The Editor, *Quarterly Journal of Medical Science.*"

We have been obliged to hold over several Original Communications, Reviews, and Clinical Records.

Books and Periodicals published in Northern Europe and the German States, intended for our Journal, should be transmitted "For the Editor of the Dublin Quarterly Medical Journal, care of Messrs. TRUBNER and Co., *London,*" *through their Correspondents* in the principal Towns on the Continent. Our Correspondents in France, Belgium, Italy, and Spain, are requested to communicate with us through "DOCTOR HIGGINS, 212, *Rue de Rivoli, Paris.*"

AMERICAN Books and Journals often come to hand with such an amount of Charges on them, that we cannot release them. It is requested that *all* communications from the United States shall be forwarded to MR. JOHN WILEY, *New York;* or Messrs. BLANCHARD and LEA, *Philadelphia,* directed to us, to the care of Messrs. TRUBNER and Co., *London.*

EXCISION OF THE KNEE JOINT

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Remarks upon Excision of the Knee-joint, with a Case in which that Operation was performed successfully.* By JOHN K. BARTON, M.D., Dub.; F.R.C.S.I.; Surgeon to the Adelaide Hospital, and Lecturer on Surgery to the Ledwich School of Medicine.

IN any new operation, the propriety of which has been proved in some cases, a certain time must elapse before sufficient experience is gained to enable surgeons to say, with confidence, under what conditions, and under what conditions alone, it should be had recourse to. Until this experience is gained the operation will probably have its thoroughgoing partisans, who will do more to hinder its general adoption, by their indiscriminate commendations, than its opponents, on the other hand, who condemn it altogether. Excision of the knee, since its revival in 1851, has in this way been on its trial; it has been performed for the most various kinds of disease, and at all ages, and in all kinds of constitution, and the result has been, some cases where a most useful limb—straight, firm, free from all disease, and not more than two or three

inches shorter than the other—has been gained: in fact, the opera-
tion has been successful in saving a limb. But, on the other hand,
we have numerous failures, either from excessive shortening, or
distortion of the limb, rendering it useless, or from amputation
becoming necessary, or death resulting from the operation itself;
so that, taking all the cases recorded, we have a very high rate of
failure. Heyfelder gives the result in 183 cases; of these, 73, or
about 38 per cent., were acknowledged failures, either from death
or subsequent amputation. Mr. Butcher gives a statistical report
of 82 cases, amongst which 26 per cent. were failures; and Mr.
Humphreys, of Cambridge, out of 13 cases has 5 failures, or 35
per cent. Mr. Jones, of Jersey, reports 14 cases, all successful but
one. Taken all together these figures show a very high rate of
failure (34 per cent. on the whole number); and, although a great
number of successful cases have been reported since then, yet it
seems probable that if *all* cases which have been operated upon
were recorded, we would not have at all a more favourable per-
centage. Mr. Skey, after characterizing the operation as one of the
most brilliant triumphs of modern surgery, says:—" This brilliancy,
however, pales not a little in consideration of the large mortality
that has marked the progress of this conservative operation—an
operation admirable in the boldness of its design, and not less so in
its consequences; and nothing but a more general success is required
to justify the high commendation bestowed upon it, and the remark-
able notoriety it has hitherto acquired throughout the surgical
world."[a]

It may be well, in adding another to the list of successful cases,
to inquire, what are the conditions of success? If it be admitted,
as I believe it generally is, that a leg shorter by two or three inches
than the other, and rigid at the knee, is still very much better than
an artificial limb, then the question is, under what circumstances
are we to prefer excision of the knee to amputation? In the first
place, then, the diseased knee-joint must be plainly past all hope of
firm anchylosis before the question is to be discussed at all; for the
most ardent advocates of excision have not been able to prove that
the operation is not fully as dangerous as amputation of the thigh;
and it never could be right to subject a patient to such risk of life
as long as any amount of time and rest gave a hope of a sound
anchylosis being obtained.

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[a] Operative Surgery, p. 441.

Now that the true principles of the treatment of diseased joints by perfect and continued rest is becoming better understood, in how many cases is a firm anchylosis obtained, where formerly the limb would have been condemned to amputation? I had an opportunity very lately of examining a limb—firmly anchylosed at the knee, perfectly straight, and which had then been bearing the weight of its possessor for many years—which the patient assured me the late Sir Philip Crampton had condemned to amputation; upon the patient refusing to submit to this, that celebrated surgeon had assured him he believed if he did not consent to lose his leg he would certainly lose his life. I mention this, because it shows the difficulty of the question we have to decide in such cases—one in which the most experienced may err, and therefore one in which, if there is a doubt, we should give the patient the benefit of it: in other words, unless we are perfectly clear that anchylosis cannot be obtained, we should make the attempt perseveringly to obtain it, before we consider the question of operation at all. The wonderful improvement which at once takes place in the constitutional symptoms of a patient with diseased joint, when, by judicious appliances, perfect rest is secured for the limb, encourages us to try, in every case, what can be done in this direction first, no matter how severe the symptoms may be. I believe we will often be able thus to limit still further the cases in which we will have to consider the comparative advantages of excision or amputation.

When, however, the symptoms plainly declare that there is no longer any probability of procuring a firm anchylosis—that the patient must either lose his life, or, if recovery be possible, that it can only be with a distorted, painful, and useless limb—then comes the question, whether is excision or amputation to be preferred? The age and constitution of the patient, and the nature and extent of the disease, must each be considered. First, as regards age; if the patient have reached forty years of age—I should, in the majority of cases, recommend amputation in preference to excision, because a very great degree of reparative power is necessary to render a limb, after excision, a perfectly firm support.

As a general rule, people after forty will not have sufficient vital power to gain them sound firm union between the bones, without which the limb preserved to them is worse than useless. In the young the formative power is strong and vigorous, and to such the preservation of a limb is of greater consequence than to the more advanced in life, such patients are, therefore, better suited for

excision. But if growth has not been completed, it has been found, in some cases, the further growth of the limb has been arrested, no doubt from the epiphysal line being either cut away or cut through, this disastrous result then is to be avoided by refusing excision in children, unless the removal of a very thin layer of bone, leaving the line of epiphysis quite untouched, will suffice. As far as age goes, then, young people whose growth is nearly or quite complete, or people who, although not very young are still in the prime of life, are the fit subjects for excision.

Now, as regards constitution, the same consideration—viz., the vital power required to make excision successful—will influence us. In a markedly strumous constitution, although no symptoms of visceral disease can be detected, excision should never be performed. We know that inflammation in such constitutions, instead of ending with effusion of plastic lymph, usually furnishes a sero-purulent fluid. After excision we have inflammation set up. In a healthy subject this ends in plastic effusion, and union between the opposed surfaces; but in a strumous constitution very little, if any, plastic lymph will be effused, while a copious suppuration going on will wear down the strength of the patient. In amputation the amount of adhesive inflammation necessary is comparatively small. So that when excision may utterly fail from the above causes, amputation may be safely performed. From similar reasons we should refuse excision in the cases of patients in other respects suitable, if they have been hard drinkers, for here we have a state of the constitution in which inflammation runs an unhealthy course, pus being readily formed in place of lymph. Should the patient present the symptoms of constitutional syphilis, I think we ought first to treat him for this disease, postponing any operation until its result could be seen, for in such patients every symptom is modified by the syphilitic poison; and until the symptoms of syphilis are removed we cannot tell how much of the disease of the joint may not owe its origin to this cause, and be capable of removal consequently, without operation. The existence of scurvy or purpura would altogether forbid the operation until these symptoms were entirely removed, as we could not hope for solid union in such a state of the blood. In such a constitutional state any operation would, of course, be contra-indicated; but certainly, if the choice had to be made, amputation should be chosen. It may often be difficult to say, in the case of a patient emaciated by long-existing joint disease, what kind of constitution he had originally, but there

is, it appears to me, something very different in the aspect of a patient, ever so worn by local disease, and the appearance produced by any of the states of the constitution I have named. Having, however, satisfied ourselves, as well as we are able, that our patient's fever, emaciation, &c., is simply the effects of the local disease, we need not hesitate to perform excision on account of the severity of them; the constitution, being sound, will quickly assert itself when once the diseased joint is removed—a few days alone sufficing, after the operation, to make a wonderful change in these symptoms, and in the whole appearance of the patient.

Turning now to the local conditions which indicate or contra-indicate excision of the knee, it is evident that any disease of the joint which has produced suppuration, is just to the extent to which suppuration has gone, unfavourable for excision. Not only does abscess, in or about the joint, indicate a constitution unfavourable to excision, but it is generally the result of extensively diseased bone; and when we have evidence of the ends of the bones being extensively diseased, I believe amputation is the only operation advisable, for two reasons—first, excision would most likely fail to produce a sound or useful limb—and, secondly, if solid union was obtained between the bones, the amount of shortening would be so great that the limb would be of little use, its questionable advantages, being five or six inches shorter than the other, by no means compensating for the six months additional time spent in recovery. Necrosis of part of the head of the tibia or abscess in this bone, do not constitute states suitable for excision, as in order to get healthy bone for union, two to three inches of the tibia must be removed, which with the piece necessarily removed from the femur, would make the limb too short.

Of the three kinds of diseases of joints as described by Brodie— viz., that which originates in the bone, that which originates in the synovial membrane, and, finally, that beginning in the articular cartilages—the latter is the form of disease which offers the most suitable conditions for excision, for here the bone is but secondarily and to a small extent engaged, and there is very little tendency to suppuration. In acute inflammation of the joint, with suppuration, arising either from accident or otherwise, incision into the joint, to evacuate the purulent contents, will be the only operation required, and will probably be followed by anchylosis. In severe injuries to the knee, either compound fractures, implicating the joint, or severe lacerated wounds opening the joint, when it may be thought

impossible to save the limb complete, it does not appear to me that excision will be at all applicable—for if the nature and extent of the injuries render the recovery of the limb hopeless, they would seem to me necessarily to forbid excision, the shock of which must be at least as great as amputation of the thigh. The experience of military surgeons who have attempted this operation for injuries in the field, is not encouraging. It should be borne in mind, when considering the question of excision of the knee, that any case which does not result in giving the patient a perfectly *firm, straight*, and *healthy* limb, must be considered a failure. It is totally unlike amputation in this respect, which is always undertaken as a last resort, and is successful if the patient's life is preserved and the stump heals soundly. Viewing the matter in this light, it must be admitted, if the remarks I have made are well-founded, that the cases suitable for the operation of excision of the knee are rare. They will require—first, youth, or a vigorous middle age; secondly, no constitutional disease, or signs of deteriorated blood; thirdly, the disease of the joint to be non-suppurating, and confined, or nearly so, to the articular surfaces. If from the cases which combine these conditions we subtract those of them in which a firm anchylosis can be obtained by rest and other suitable means, we have but few remaining in which the operation is called for; in these few, however, we have in excision the means by which we may not merely save the patient's life, but with his life give him back his limb; and it must be admitted that in doing this the operation well merits the encomiums it has received of being the most brilliant achievement of modern conservative surgery. The details of the operation itself, and the important after-treatment, seem now to be nearly perfected. All that we require to raise the per-centage of successful cases to three times its present ratio is a judicious selection of cases.

The following case appeared to me and to my colleagues to be one of those rare cases of diseased knee-joint which demanded operation; and, at the same time, both from the sound constitution of the patient, and the nature of the joint disease, admitted of excision:—

CASE.—Thomasina A., a girl, up to this time at school, sixteen years of age, with dark hair and eyes, was admitted, for the first time, to the Adelaide Hospital, on the 26th of April, 1862, for scarlatina, which she had very severely. After the fever had subsided several of the large joints became the seat of pain and effusion, the knees being

the worst. The left knee became flexed; and when the inflammatory symptoms had quite disappeared from the other joints this was still painful. She was then transferred to the surgical ward, under my care. The patient was then very emaciated, but her tongue was clean and her appetite good. Her left knee-joint was flexed nearly to a right angle; it measured half an inch more in circumference than the right, was slightly hotter, and, if any forcible extension of the leg was attempted, was the seat of severe pain; but when the limb was at rest there was no pain. I now placed the limb upon a double inclined plane, with a firm foot-piece, and applied a succession of small blisters to the joint—the patient being kept upon the same generous diet which had been given her before she came under my care. The inclined plane, being supplied with a screw underneath, admitted of extension being made; this was accomplished very gradually. If the least pain was felt, no further extension was attempted for some days; then it was very carefully recommenced by a few turns of the screw daily. By this means, at the end of six weeks, the limb was nearly straight—the knee being quite free from pain, and soon the patient was walking about with a scarcely perceptible limp. She now returned home, and continued in good health, and walking about, for nearly a year. Towards the close of 1863, however, she began again to feel pain in the left knee-joint; this accession of pain was not produced, as far as she knew, by any injury; but it appears probable that she had used the limb too much, and after she had begun to feel pain in it still continued to use it. She was re-admitted to hospital in January, 1864, when the condition of the limb was as follows:—The muscles were considerably atrophied; the knee was semi-flexed, the condyles of the femur and the patella being very prominent in front; the circumference of the joint was very little more than the other; it was the seat of constant pain, the starting at night being especially severe; pressure on the patella caused acute pain, as did also the slightest motion of the leg, or pressure upwards of the heel; the temperature of the joint was much above the standard of health; there was no perceptible increase in size of the bones either above or below the joint. The constitutional symptoms were:—Pulse 100; tongue furred; face flushed; appetite very bad; scarcely any sleep was enjoyed, as the starting pain awoke her very frequently at night.

The treatment adopted was, perfect rest for the limb, which was supported upon a double inclined plane, and small doses of grey and Dover's powders internally. Very little improvement was obtained

by these means, although they were persevered with until it was thought advisable to change the mercurial for iodide of potassium in decoction of cinchona bark; and, with the view of securing more perfect rest to the joint, the whole limb was enveloped carefully in a starch bandage. The patient expressed herself as feeling very comfortable when this was put on; but it had to be taken off upon the following day, as the pain in the joint had increased very much, and the night had been passed in much suffering. The limb was again placed on the splint, and a caustic issue was next inserted upon the inside of the joint. This was followed by some diminution of the pain; but the constitutional symptoms began to show that this state of irritation could not be borne much longer— scarcely any food being taken, and sleep, even with opiates, very broken. In consultation with my colleagues, it was agreed that before resorting to any operation another caustic issue should be inserted in the neighbourhood of the joint; but it was at the same time agreed that, should this not be followed by relief to the symptoms, excision of the joint should be performed. The opening of the second issue seemed to make no difference; the symptoms remained unchanged, with the exception of the increasing constitutional irritation and exhaustion of the patient. The operation was accordingly determined upon, and the issues were dressed with a view to have them healed as rapidly as possible. A careful examination of the thoracic and abdominal organs showed they were healthy; so that all the conditions likely to ensure a successful result were present in this case. The disease was pure ulceration of the cartilages. The patient was young (seventeen years of age), and of sound constitution.

Upon the 3rd of May, 1864, the operation was performed, the patient being fully under the influence of chloroform. I chose the H incision as affording most freedom in examining the joint and using the saw; the side incisions were kept well back. The patella being fixed between the condyles of the femur, some difficulty was experienced in dissecting up the upper flap from its surface; as soon as this was done the knee was bent, and the condyles of the femur freed from the tissues behind them; the blade of Butcher's saw was then applied immediately above the condyles, and the bone was sawn from behind forwards. As soon as the blade of the saw was in position, and before making the section of the bone, I had the limb laid down flat on the table, and was thus enabled to carry the saw perfectly straight through the bone. The articulating

surface of the tibia was sawn off in a similar manner, so that subsequently, when the cut surfaces were brought together, they lay in the closest apposition throughout. The wounds were brought together with iron wire suture; only one small artery required ligature. A box, resembling that used by Mr. Butcher, and figured by him in the pages of this Journal, having been prepared beforehand, I placed the limb in it before the patient left the operating table; the advantages of this box-splint, I may mention, are, that when the limb is once properly placed in it, it secures perfect rest, at the same time allowing of free and frequent examination, if necessary, without permitting the smallest motion of the limb. The foot-piece being fixed and independent of the sides, one or both sides may be let down, and every part of the wound examined with ease and safety. A short anterior splint was applied over the thigh. As soon as the patient had been removed to bed a draught containing twenty drops of the liq. opii sed. was given.

Upon examining the articulating extremities of the bones which had been removed, we found that the patella was firmly anchylosed between the condyles of the femur, being turned partly round on its edge. Its cartilage was extensively ulcerated, while that upon the condyles of the femur and head of the tibia was nearly entirely removed; the bone itself where the saw had divided it appeared quite healthy, being soft towards the joint where the cartilage had been or still remained; altogether about two inches of bone had been removed.

The patient suffered from sickness of stomach for some hours after the operation. At 3, P.M., the pulse was 140; there was constant vomiting, with thirst, and severe pain referred to the wound. Twenty drops more of the liq. opii sed., with three of the acidi hydrocyanici dil., and some spt. amm. aromat. were given at once, and iced lemonade was taken freely for drink. Some reddish serum was seen at this time oozing from the sides of the box.

In the evening of the same day the vomiting had ceased; pain in the wound much less; extremities warm; one grain of opium in pill was taken and repeated during the night; iced drink frequently.

May 4.—Had some sleep during the night; pulse 120; tongue moist; skin cool; sickness of stomach much less; limb feels comfortable. Pills containing a grain of opium were given three times during the day and night. 5th.—The patient going on very well; no sickness of stomach; no pain anywhere. The sides of the box-splint were carefully let down, one at a time; the pads, soaked

with the reddish serum which had been flowing from the wounds, were removed and replaced by clean ones, without the slightest motion of the limb being produced.   6th.—There had been sound refreshing sleep during the night, and her condition was favourable in every respect. The opium was now discontinued; light nourishing diet ordered; wounds examined; no suppuration whatever; edges of the wounds uniting. The further daily record of the case is unnecessary; the steady progress to recovery was unchecked by a single unfavourable symptom or untoward complication. The wounds united by adhesive inflammation, there being no suppuration whatever, except in the anterior flap where the single ligature was placed, and which did not come away for three weeks. The iron wire sutures held the flaps accurately together, caused very little irritation, and were easily removed. Four weeks were allowed to pass before the limb was moved at all; the examination and dressing of the wounds was accomplished without any motion whatever being given to the limb; and when again secured in the box it was impossible for the patient when moving in bed to do more than move the whole limb, box and all, a little from side to side.

At the end of the first month, pressure on the heel being complained of, the limb was very carefully raised, and fresh cushions placed behind it. For two months the box splint was kept on; then it was replaced by back and side splints; and at the end of three months the whole limb, from the toes to the middle of the thigh, was encased in a very strong starch bandage, strengthened round the knee with pasteboard splints, which gave it perfect support. Thus protected the patient left the hospital for Sandymount, where her relatives lived, and remained, chiefly in the recumbent posture, for three months more, at the end of which time I removed the starch bandage, which was as firm as the day I put it on, and found the most perfect union had taken place between the bones; not the slightest motion could be produced, while the patient had complete command over the limb. Lying on her back she could raise it from the sofa, and move it in any direction; when in the erect posture she rests her weight securely upon it. The limb is perfectly straight, and measures exactly an inch and a half less in length than the other. I have had a photograph taken of this patient, seven months after the operation, from which the accompanying lithograph has been copied. It shows the shapeliness of the limb, that it is perfectly straight, and capable of bearing the weight of the patient; but it cannot show the firmness and

solidity of the union at the knee which has taken place The patient had not, when this was taken, regained sufficiently the use of her leg to enable her to walk without some artificial support. Now, however (January 3rd, 1865), exactly eight months after the operation, she walks without either crutch or stick, and feels, to her own surprise, a freedom and confidence in moving about, to which she has been a stranger for more than two years.

Art. II.—*Remarks on Scarlatina.* By Wm. J. Cummins, M.D., &c., &c.

The medical profession in the South of Ireland had heard of the ravages committed by scarlatina in the more northern parts of our island, and had studied the severe forms which it there assumes, in the writings of the illustrious Graves, and other eminent men, long before the epidemic constitution of our locality permitted us to see them for ourselves. It was in the years 1856-7 that a change was first observed, and since then each succeeding epidemic has been more and more severe, so that at the present time the name of scarlatina is as much dreaded by the parents and guardians of youth here as elsewhere. Notwithstanding this steady increase in the virulence of the disease amongst us, we cannot help noticing that it has a very inconstant character, presenting different types, not only in different epidemics, but even at the same time in the same locality, and under circumstances apparently similar in every particular. Were it otherwise, we could explain this Protean character by referring to the degree of concentration of the epidemic poison, as influenced by the various circumstances which are known to localize zymotic poisons generally; but to these alone it cannot be attributed, as circumstances occur constantly in the practice of every one which oppose such a conclusion. I have myself seen, on more than one occasion, four or five members of the same family in one curtained bed, in a small close room, all breathing the most concentrated essence of scarlatina poison, and yet each affected so differently that the mildest and most malignant cases could hardly be recognized as the same disorder. Hence we cannot attribute the different types of scarlatina entirely to a varying intensity of the poison which causes it. When we endeavour to solve the question by examining into the constitutions of those struck down by different types of the disease, we are no less at fault; for we find

that the most strumous and delicate occasionally fare better than the most robust. It would seem, then, probable that there is some peculiarity in the pabulum on which the poison acts, some principle of the blood normally in excess or diminution, which determines the amount of its reproduction within the system. To this conclusion tends much of what we know of the disease, for it rarely attacks the same person a second time; it is less likely to attack, and less severe when it does attack, in a ratio with the advance of age from childhood upwards; it selects the victims of its most fatal forms too often from the same family circle, " running in the blood," as the saying is, as if it found a more fruitful soil in the inherited peculiarities of some than of others; and lastly, some children evince an inability to take contagion so marked that it would seem as if whatever pabulum it acts upon was entirely absent from their systems. But whether we can refer the diversities in type presented by scarlatina to an hypothesis of this kind or not, is of less moment to the physician than the knowledge that they do exist, and that we cannot thoroughly understand the disease without studying them at the bedside.

In systematic treatises we find scarlatina described under three forms—scarlatina simplex, scarlatina anginosa, and scarlatina maligna; but as I have tried in vain to thus classify the cases which occurred in my practice during the present epidemic and that of 1861-2, which I am about to describe, I shall adopt a more comprehensive arrangement, and note some particulars of each of the following types:—

> 1st. Epidemic sore throat.
> 2nd. Typical scarlatina.
> 3rd. Typhoid scarlatina.
> 4th. Congestive scarlatina.
> 5th. Malignant scarlatina.

That which I have called epidemic sore throat is sometimes the pioneer of an epidemic of scarlatina, sometimes treads upon its receding footsteps, but is most frequently seen in adults who are exposed to contagion. It is generally characterized by inflammation and ulceration, with patchy deposit on one or both tonsils, sometimes by vivid redness of the hard and soft palate and pharynx. The interior of the mouth is hot, and moistened with a viscid saliva, and the tongue is often of a light grey colour; a variable amount of fever accompanies the local symptoms, with headache, lassitude,

and loss of appetite. This disease runs its course in a few days, requiring little treatment but rest, saline aperients, emollient gargles, and inhalation of the steam of hot water. Its distinguishing point is, that it is due to the epidemic or contagious poison of scarlatina, of which it seems to be a mild form.

I have denominated the second variety " typical scarlatina," because it represents what I conceive ought to be the ordinary phenomena of the disease when due to the reception by a healthy individual of an average dose of the poison, which, when reproduced in the blood, is directed towards the throat and skin, and there matured into compounds capable of being excreted from the system. It commences generally with nausea and vomiting, followed by headache, heat of skin, and sore throat. The eruption appears on the first or second day, and consists of a number of bright scarlet spots, about the size of a pin's head, spreading from the upper parts of the body towards the lower, but often appearing almost simultaneously upon face, body, and extremities; this becomes more raised above the surface about the third or fourth day, communicating to the finger passed over the skin a sensation of roughness, which is partly due to a number of minute vesicles with which the eruption is interspersed, especially on the abdomen and wrists. About the fifth or sixth day rash begins to decline, and with it also the fever; the tongue, which had been red at tip and edges, and covered with a greyish coat, through which the papillæ could be seen rising red and enlarged, begins to clean, and soon becomes moist and natural; the appetite returns, and, at the same time, the throat, which had advanced from one stage of inflammation to another, and perhaps been spotted over irregularly with thin white patches of exudation, or been superficially ulcerated, shows signs of improvement, and returns gradually to its natural condition about the time when the eruption has disappeared or desquamation of the cuticle has commenced. It is astonishing how quickly convalescence is established in these cases; the patient soon craves for food, and is most solicitous to leave his bed and get about; but it is in such cases, too, that there is most danger of sequelæ, if precautions are not taken against exposure or premature resumption of ordinary pursuits. In thus rapidly glancing at this form of scarlatina I have noted down the symptoms of its ordinary course, without attempting to enter into details or varieties, and I will not dwell upon any of its phenomena, except the vomiting of the first day or two, which I was quite unprepared to find so common as to be almost a

pathognomonic sign of the invasion of the disease, and only ominous of evil when persistent or bilious.

The typhoid form of scarlatina commences much in the same way as that I have just noted, but is early marked by prostration, great heat of skin, and an excessively rapid pulse—one impulse, as it were, flowing into the other; delirium also commences early, with grinding of the teeth, starting and twitching of the voluntary muscles, and rapid respiration, broken occasionally by a most characteristic sigh or moan. These symptoms increase as the disease advances, and are little, if at all, relieved by the eruption, which is dark-coloured, confluent, and sometimes irregular in its distribution. A full and general eruption is not, however, inconsistent with this form of scarlatina; and, although never of the vivid redness presented by the typical variety, is sometimes more completely developed than in the milder form. Somnolence occasionally alternates with delirium; but, in many cases, restlessness and want of sleep continue during several nights, and, if unchecked, become the precursors of fatal coma. Partial or total suppression of urine is a dangerous complication, which often aggravates these cases. The tongue, although dry, is not usually rough and tremulous, as in typhus, but appears shining and tense, as if the epithelium had been scraped off, and a coat of varnish applied to it; its surface sometimes cracks, and assumes a most characteristic appearance. The throat rarely gives any trouble in this form, and, if examined, appears of a dusky red colour, with enlargement of the tonsils and uvula. There is little difficulty or pain of swallowing. About the fourth or fifth day cough usually commences, and is sometimes troublesome; it is caused by a sub-acute bronchitis, as indicated by dry and moist râles, scattered through both lungs; dyspnea does not attend this affection; and, if present, is due to inflammation or congestion of the lungs. I have seen two cases of pneumonia, and traced the physical signs of consolidation to complete resolution.

The train of symptoms which mark the typhoid variety of scarlatina generally begin to decline about the tenth or twelfth day, when the case often lapses into a condition similar to rheumatic fever, without its characteristic diaphoreses. The pains wander from one joint to another, and are often accompanied by redness, stiffness, and swelling, which usually subsides rapidly, but in exceptional cases may fix upon an articulation and disorganize it. Sometimes the membranes of the heart are seized upon by a transient inflammation, and the patient's life placed thereby in

imminent peril. During the epidemic of 1862–3 many sudden and unexpected demises took place in this city, which *post mortem* examination would probably have proved to be due to such affections. I witnessed at least two cases in which pericarditis was unmistakably demonstrated by the physical signs. The first occurred in the person of a young woman who had passed through scarlatina, and whose skin was beginning to desquamate, when an uneasiness, referred to the cardiac region, induced me to place a stethoscope over the heart: to my astonishment I heard a distinct friction sound below the nipple, extending upwards. I had a large blister applied immediately, which rose well, discharging a large quantity of serum, and completely removing the uneasiness. When I next examined the heart the friction had disappeared, and, I presume, with it whatever inflammation had occasioned it, as no sign of pericardial effusion could be detected. In this case swelling of some of the articulations followed, and continued for a few days, after which the patient convalesced perfectly, and is now (two years having elapsed) in robust health, and without any evidence of adherent pericardium.

Shortly after the occurrence of this case a girl, aged twelve or fourteen, while convalescing from typhoid scarlatina, suffered from articular pains; about the twelfth day I placed a stethoscope over the cardiac region; and, although no complaint had been made of uneasiness or pain, friction was distinct and extended. A few hours after she died suddenly.

One more case I saw immediately after death. A young married lady, respected and esteemed by all who knew her, had progressed favourably through scarlatina, when, about the sixth day, after drinking a glass of wine, she fell back and expired. Death probably resulted from the same cause.[a]

[a] The occurrence of pericarditis as a complication of scarlatina was known as early as 1819, when it was described by Roux and Krukenbergius. Trousseau says Bouillaud pointed it out. Burrows, Willis, and Joy also noticed it ; and Dr. Willshire, of the Charing-cross Hospital, in an interesting paper published in the Lancet (from which I have derived the above information), mentions a case which occurred in his practice. Dr. Scott Alison published a paper in the Medical Gazette for 1845, entitled—Pericarditis : a Complication and Sequela of Scarlatina. Dr. West ("Diseases of Children") says that in two cases of pericarditis, in three of acute and one of chronic endocarditis, or in six out of thirty-nine instances, disease of the heart was traced to an attack of scarlet fever. Dr. Budd found recent lymph on the surface of the heart, and an ounce of serous fluid in the pericardium of a patient who died of scarlatina, with feeble action of the heart, although there had been no abnormal sound heard during life. Dr. O'Ferrall also alluded to this complication in his communication to Dr. Graves in the year 1835.

The next form of scarlatina which demands our notice is the congestive; and, instead of describing it as I have done the others, I shall take a rapid survey of a few cases:—

Some time since, a fine healthy boy, about twelve months old, who had been ailing a few hours, was attacked by violent convulsions, and lay perfectly unconscious, with dilated and immovable pupils, and heat of head; the muscles of one side were much more affected than the others. In this state he continued for six or eight hours, during which time hot fomentations and sinapisms were applied to the body and extremities, combined with the internal administration of purgatives. These means brought out a copious eruption of scarlatina, which immediately relieved the head symptoms; and, after proceeding through the ordinary course of the disease, he recovered perfectly.

Two young ladies, aged respectively six and eight, were attacked by severe vomiting, the elder about 2, a.m., the younger about five. A general practitioner of much experience visited them about 9, a.m., and pronounced the disease scarlatina. The vomiting persisted during the day in both cases, although the rash was pretty well out and the throat almost unaffected. The elder became heavy and stupid, but still conscious, towards evening, and continued in that state throughout the night; but towards morning the rash faded away entirely, and I was sent for. I visited them at 10.30, a.m., when I found the eldest dead, and her sister lying prostrate, with a feeble pulse of 140; rash tolerably distinct; heavy and stupid; vomiting and purging constantly; the secretion from the bowels being of a dark green colour, and subsequently black and slimy, like the black vomit and dejections of yellow fever; urinary secretion scanty. I immediately shaved the head, administered wine, and had hot fomentations applied to the lower extremities, abdomen, &c. These means rallied her in a few hours, and the reaction was terrible. The pulse rose to 160, full and bounding; carotids throbbing; delirium, alternating at times with a condition of semi-coma; complete suppression of urine. Leeches were applied to the head; antimonials, with small doses of hyd. c. creta, administered; wine suspended; and, after a time, ice to the shaven scalp, &c. The patient improved gradually, and in a few days epistaxis occurred, and she recovered perfectly.

I was called to another child, who had been ill for twenty-four hours, with constant vomiting. He was in convulsions when I saw him, became comatose shortly after, and died in a few hours.

Within a week six or seven members of the family were attacked by scarlatina.

During the present epidemic I have seen two more cases, which, although not sufficiently characteristic in their symptoms to be recognized absolutely as cases of scarlatina, if the disease were not prevalent, at the time, in their neighbourhood, are similar in many respects to those I have already detailed.

A fine child, who had been healthy and well up to a few hours before I saw him, was brought to my dispensary one morning, appearing very sick and heavy, with rapid respiration and quick feeble pulse. I was quite at fault as to the nature of the disease, and a careful examination of the lungs threw no light upon it, as they were unaffected; still the expression of countenance, betokening both anxiety and distress, indicated some grave affection. I prescribed an emetic, which acted more on the bowels than stomach, and seemed to give relief. Again, however, the symptoms returned, and the same evening the child was brought to my house, evidently dying, with intermitting, feeble, rapid pulse, and excessively rapid respiration. On examining the chest I could hear nothing beyond a few scattered bronchial râles; there was no rash on the skin, which was cold and shrunken; the throat appeared slightly congested, but presented no further evidence of disease. Death occurred about an hour after, and was due, I believe, to congestion of the lungs and stasis of the circulation, the result of some undetermined cause; but as malignant scarlatina was raging in a neighbouring village, and broke out shortly after in that in which the child resided, we may suspect, if we cannot conclude, that this case was one of the first heavy droppings of the thunder shower.

The second case occurred also in the neighbourhood of the village in which scarlatina was doing its deadly work, and among an isolated set of houses which had hitherto escaped its ravages. I was sent for to see a child in one of them, who had suddenly been struck down by malignant scarlatina. It was one of the worst cases I have seen. While there I was informed that a cousin of this child, residing a few doors off, a fine little girl, eight years old, who had been quite well the morning before, was attacked by severe vomiting and purging, unaccompanied by cramps, which had continued during the day and ceased towards evening; that she seemed weak and restless, and was very thirsty during the night, calling constantly for cold water, and that she died at eight o'clock in the morning. I went to see the corpse, which, although only a

few hours dead, had turned almost quite black in all except the most anterior parts of the body.   There had been no complaint of sore throat, and no rash of any kind was visible; but the absence of cramps, which so often attend cases of cholera, and the unusual severity and rapidity of the disease, point to an intense poisoning of the system, with extreme congestion of the gastric intestinal mucous membrane.   The simultaneous occurrence of scarlatina in her cousin, and the fact that most cases of scarlatina in the present epidemic commence with purging and vomiting, shed an indistinct light on the nature of the poison which caused death with such appalling rapidity.

Now, the essence of all these cases seems to be congestion—local in some, general in others; the former due to an *error loci* of the poison, whereby, instead of being directed towards the throat and skin, it is turned inwards towards the lungs, brain, or other organ or tissue essential to life; while in the latter case the poisoned blood exercises a depressing effect upon the nervous centres, and through them on the entire capillary system, permitting the blood to accumulate in the small blood vessels of every part, and thus implicating nutrition, secretion, excretion, and all the vital processes dependent on active capillary circulation.   Instances similar to these are to be met with in other febrile diseases; and when first I happened to see them in this country I was greatly struck by the resemblance they presented to yellow fever, with which I had become painfully familiar during two of its most formidable epidemics in the West Indies and Brazils.   So much was my mind influenced by this similarity that, when writing a paper, in the year 1856, on " The Cause of Early Dangerous Symptoms in Febrile Diseases "—which I read before the Cork Medical and Surgical Society, and subsequently published in the August number of *The Dublin Quarterly Journal* for that year—I contrasted the two classes of disease, and showed how they differed principally in the *primary* operation of the poison being in the one case on the nerves of organic life, and in the other on the blood;[a] a distinction important in its bearing upon treatment, as well as interesting to the curious and enquiring mind.

There is yet one other type of scarlatina which I have not treated of, viz., the malignant; and a fearful phase of the disease it is to

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[a] Besides the essay referred to in the text, the author has entered into this subject in the Lancet for July 23rd, 1853, and the Dublin Hospital Gazette for June 15th, 1854.

contemplate. Not that the patient is struck down with the
appalling rapidity which we have just noted in the congestive
type, but because the blood, tainted at its source by the original
poison, becomes more and more contaminated by the local inflam-
mations, which, instead of maturing the poison into compounds,
capable of being excreted, pervert it into a new variety of septic
agents. In this form of scarlatina the rash may be well out and
the patient progressing favourably in all except one particular.
The throat, which had been early complained of, becomes rapidly of
a dusky hue, then covered with a yellowish white exudation, and
deep, irregular ulcerations appear on the tonsils; sometimes, how-
ever, an apparent convalescence takes place about the sixth or
seventh day, and then, with a renewal of fever, the throat symptoms
become intensified, and a quantity of viscid phlegm is secreted,
which soon changes into an acrid, semi-purulent matter, which runs
from the nose, and gurgles in the throat with each inspiration and
expiration; the breath is very fetid, and sometimes of a gangrenous
odour; at times ash-grey sloughs form upon the tonsils, soft palate,
uvula, and pharynx, or a membranous exudation, similar to that of
diphtheria, covers these parts. In a case which I lately saw the soft
palate seemed as if formed of a membrane of this kind; in another
it completely covered the tonsils (both recovered under the internal
use of the muriated tincture of iron). In a short time the infra-
maxillary glands rapidly enlarge, forming what Trousseau calls
buboes; these, by impeding respiration, and pressing upon the
vessels of the neck, are generally the cause of death. They are
sometimes of a brawny hardness, sometimes feel as if doughy,
occasionally present an obscure sense of fluctuation, and sometimes
soften, and are formed into large abscesses. The inflammation of
the throat is often of an erysipelatous character; and, in one case
which I lately saw, it proved fatal by spreading down the air
passages before buboes had time to form, the patient dying on the
third day of the disease. As the throat affection progresses the
patient becomes more and more feeble, the rash disappears, the face
assumes a deadly, earthy pallor, the teeth become covered with
sordes, respiration is hurried and anxious, the power of speech is
quite lost, although swallowing may be wonderfully free; patches
of inflammation sometimes appear on the skin, and rapidly become
gangrenous. I have seen a large part of the anterior surface of the
chest slough away in this manner. Sometimes phlegmonous
inflammation appears in an extremity, or purulent depots occur in

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the cavities of the joints. The pulse intermits and increases in rapidity and feebleness, respiration becomes more and more accelerated, and death by coma or asthenia soon follows.

The foregoing brief details of the various forms of scarlatina are not to be considered as a complete description of the disease; they must be looked upon simply as a classified, comprehensive account of the cases I have attended in the two latest epidemics; and, if they err in faithfulness of delineation, the fault is not mine, as I have carefully considered every symptom mentioned, and endeavoured to draw my pictures from nature. The advantages to be derived from being able, mentally, to classify the cases of a disease which presents so many varieties as scarlatina, are very great, as it enables us rapidly to determine upon the most suitable line of treatment; for, besides being guided by the leading indications presented in common by every variety of the disease, much of our success in its treatment must depend upon palliative symptoms removing local complications and obviating tendencies to death. In the simple or typical form of scarlatina we find a strong tendency towards recovery. The efforts of the *vis medicatrix naturæ* are made with vigour, and generally conduct the poison rapidly through the transformations necessary to its removal from the system, per *vias naturales;* and yet we cannot recommend the student to stand by unmoved and permit nature unaided to triumph; for we know too well the treacherous nature of the disease with which we have to deal, and the insidious manner in which one type sometimes lapses into another. We therefore look around us for some agent capable of neutralizing the poison, and aiding in its expulsion from the system.

The term zymotic has been applied to scarlatina, and all other diseases which depend upon a poison capable of reproducing itself within the system. I shall not stop to inquire whether the theory implied by the name is correct, but shall quote at length an extract from a most able review which appeared in the seventy-fourth volume of the *Dublin Quarterly Journal:*—" We have little doubt in our minds concerning the general truth of the zymotic theory of disease, though the fermenting process within the live tissues of the animal may be a very different thing from the fermentation in the brewer's vat—perhaps catalytic diseases might be a less objectionable appellation—but that a process similar to fermentation does take place in the body during certain diseases we have no doubt of whatever, or how could we account for the fact that a

speck of small-pox virus introduced into the healthy blood is reproduced there a million fold, if it be not that that speck is susceptible of increase in the animal economy; but if additional evidence were required we would find it in the extraordinary results obtained by Professor Polli, of Milan, who has repeatedly arrested in the living organism the catalytic action of putrefying organic matter, injected into the circulation by injecting at the same time one of those substances which are known to arrest the ordinary fermenting process, such as bi-sulphite of soda, magnesia, or lime." The perusal of this passage greatly interested me, and in my case-book I applied the knowledge I derived from it to some comments I was making upon a case of typhus which I had noted shortly before; but I had no opportunity of practically putting it to the test until some time after; and, in the meantime, a valuable and suggestive paper, from the pen of Dr. De Ricci, appeared in the seventy-fifth number of the same Journal, detailing several cases of catalytic disease treated successfully with the bi-sulphite of soda, and mentioning that the late Dr. Mayne, who had seen one of the cases in consultation with him, had promised to try it in scarlatina. This is all I know of the history of the introduction of this medicine into the category of remedies which are supposed to favourably influence the blood in scarlatina, and of these I place it first in the list, not only because in theory it ought to be the most valuable, but because in practice I have found it so.

It is generally known that scarlatina has been raging for some months in parts of Cork, and that it has fallen with greatest virulence upon the dispensary district I have charge of, and those immediately adjoining it. It commenced in the month of September, and for a time was limited to four families, thirteen members of which were struck down in a short time. The disease was so intensified that it was with difficulty any one of these cases was cured. They all, however, recovered except three—one typhoid and two malignant. There was no bi-sulphite of soda to be had in Cork, and I had to wait until I could procure a supply from Dublin. When it arrived (Oct. 4th) a boy of five years of age was lying, on the sixteenth day of scarlatina, in a miserably prostrate condition, appearing at the point of death; countenance pallid and earthy; pulse 152, feeble to a degree; scarlatina bubo so large that the mouth could not be opened to examine the throat, but a horribly putrid gangrenous fetor had been exhaled from it during the previous two days, during which there had been no sleep, and an

ash-coloured semi-purulent discharge proceeded from the nose and mouth. Secondary septic inoculation of the blood had taken place, as proved by œdematous inflammation of the hand and forearm. He had been taking broth, wine, and the muriated tincture of iron for some days. Two of his sisters lay in the bed with him, affected with the same disease. I immediately dissolved one drachm of bi-sulphite of soda in eight ounces of water, and directed him to take an ounce every hour. In the evening he was better, and another drachm of the medicine was dissolved and continued as before. Next morning I was informed that he had spent a good night, and had slept; and I found that the buboes had diminished so much that the mouth could be opened and the throat inspected. The entire part appeared covered with ash-grey sloughs, and yet the power of speech had so far been restored as to make a husky whisper audible. The hand and arm continued nearly as before; but, on the whole, he appeared so much improved that I was encouraged to continue the medicine. The patient continued to improve, and, as my informant subsequently declared, became " light and lively," until 1, p.m., when a change for the worse occurred, and at my visit next morning the breathing was so rapid and the pulse so feeble that I gave up further treatment, and the patient died at 3, p.m.

This was my first essay in the treatment of scarlatina with this medicine; and, although it was not so successful as to save life, yet, considering the hopeless nature of the case, any improvement was encouraging. From that time forward I prescribed the bi-sulphite of soda (in ten-grain doses every one, two, or three hours) for every case I was called to. I have not space to enter into a detailed account of these, but shall endeavour to mention the principal facts connected with them as briefly as possible. Two members of one family were simultaneously attacked by scarlatina, and one member in each of thirteen families, making a total of fifteen cases in fourteen families. I saw them all on the first or second day of the disease, except one neglected child, who had had the malignant form, with buboes, for several days before I was sent for, and died the following day, having taken only a few doses of the medicine. This, and the one already detailed, were the only fatal cases. In all the others the medicine was prescribed on the first or second day, and was taken regularly by all, except one child, who could not be induced to swallow it for some days, until malignant symptoms had appeared, which subsequently assumed a most severe character,

attended by sloughing of the throat, and an extension of the inflammation into the air passages. Notwithstanding the severity of the throat affection in this case, no buboes formed; and, although convalescence was protracted, requiring the topical and internal use of the muriated tincture of iron, he is now up and nearly quite well. One other case assumed the malignant type, although bi-sulphite of soda had been taken almost from the first, and very large buboes formed, which brought the patient into a seemingly hopeless condition; notwithstanding which he gradually recovered, and appeared quite well, when a large abscess formed in the neck, and burst, leaving a deep sinus. I was not sent for until the patient was almost sinking from lack of nourishment and care, and he died a few days after, the victim of want and neglect.

In all the other cases the disease seemed to be much benefited by the treatment, which failed, however, to prevent a full development of the eruption and other symptoms; in two or three cases the latter assumed the typhoid character, and in one were followed by pain and swelling of the joints, accompanied by profuse diaphoresis, which is unusual in scarlatina rheumatism.

I must own I was disappointed when I found that the bi-sulphite of soda had no effect in cutting short the symptoms when administered early in the disease, but a little reflection enabled me to understand why it was unable to do so. Assuming that catalytic reproduction of a virus is the cause of the train of symptoms which characterize scarlatina, it is obvious that a medicine, the only effect of which is to arrest catalytic action, cannot influence the effects of a process which is probably complete before it manifests itself by eruption. What, then, it may be asked, is the use of administering such a medicine? I answer, because experience has taught us that the chief danger in the malignant variety of scarlatina (into which any of the others may lapse) is the tendency to secondary inoculation of the blood, a monster evil, which the sulphurous acid, set free when a bi-sulphite is decomposed by the acid of the stomach, tends to prevent. But, apart from the use of this medicine during the course of scarlatina, it is valuable as a prophylactic.

I have already mentioned that, before I was able to procure a supply of bi-sulphite of soda from Dublin, thirteen members of four families were attacked by scarlatina, and that three died (one more died a month after attack, from asthenia, caused by an abscess in the neck); it has also been stated that, when subsequently using the medicine, fifteen cases occurred in fourteen families, with no

death directly due to the disease in any, except the two cases
already detailed, in which the medicine was tried as an experiment
late in the disease, when the patients were at the point of death.
But I have yet to mention that the other members of these fourteen
families, as well as of one other which had lost a child in twenty-four
hours, without medical aid—in all fifteen families, numbering thirty-
seven individuals—took, by my orders, ten grains of bi-sulphite of
soda twice a-day.[a]   This accounts for the comparative immunity
which they enjoyed from the effects of contagion; for, with the
exception of three who were attacked by the precursory symptoms
of scarlatina—such as vomiting, sore throat, and transient eruption,
which, on pressing the medicine every three hours, subsided entirely
by the following day—and three others who went through a brief
and modified attack of scarlatina, they all escaped the effects of
contagion to which they were exposed in close unventilated houses.
The results of the trial which I have given the bi-sulphite theory,
tabulated, are as follows:—

Taking the medicine late in the disease by cases at the point of death (in one only for a few hours), 2; died 2.			
Without the medicine.		**Taking the medicine prescribed early in the attack.**	
Families Attacked Died 4 13 3		Families Attacked Died 14 15 0	
Besides one death indirectly caused by scarlatina a month after attack.		One death occurred indirectly from scarlatina a month after attack.	
Using the medicine as a prophylactic, by persons exposed to contagion in their own houses.			
Individuals Attacked 37 6	Result, . .	Cut short Modified Escaped entirely 3 3 31	
No death.[b]			

a The use of bi-sulphite of soda as a prophylactic for zymotic diseases has not been
limited to scarlatina, the author having prescribed it during the last few weeks for
several families exposed to the contagion of typhus, and so far with success.

b It may be supposed that the marked contrast presented by the results of the first

The very extreme of the importance of results such as these tends to cast a doubt on their reality; and, while I can assert that I have not overstated them in any particular, I must add that I accept the conclusions to be drawn from them with reserve, and look anxiously for their confirmation in any trial which others may be induced to give the medicine on my recommendation.[a]

Another medicine which has been used for its direct effect upon the blood in scarlatina is the chlorate of potash, and I can speak most favourably of its use. Given in doses of from five to fifteen or twenty grains, according to age, it produces a manifest effect upon the condition of the throat and the colour of the rash, which is perhaps due to the oxygen it contains; but the chlorine itself may act as a disinfectant, or when urea is retained and decomposed in the blood into carbonate of ammonia, by combining with the latter and forming a chloride of ammonium. This medicine has often failed, however, and occasionally seems to produce no effect whatever. I cannot speak from experience of the sesqui-carbonate of ammonia, of chlorine water, or of other medicines which have been used for their direct effect upon the blood in scarlatina; but the muriated tincture of iron is a remedy of great value in the malignant form, especially when there is diphtheritic exudation or a decided erysipelatous tendency.

The second indication, common to all forms of scarlatina, is to assist the efforts of the system to eliminate the poison; and, important as it is, I must pass it over with a few brief remarks. There is a decided tendency in the commencement to sickness of stomach, and in the present epidemic to diarrhea also; these should rarely be controlled, and generally may be promoted by a mild emetic and gentle laxative. Antimony, either in the form of James's powder or minute doses of tartar emetic, may be given in the typical, and sometimes also in the typhoid variety, especially when the head is engaged; it not only influences the circulation,

thirteen and the last fifteen cases is to be attributed to a change for the better in the character of the epidemic; but it could hardly have been so, as two deaths caused by scarlatina, and one by its indirect effects, occurred, during the latter part of the epidemic, among the very few cases which appeared in the author's district without being attended by him.

[a] The bi-sulphite of soda has been much used in the treatment of dyspepsia, with fermentation of the stomach contents (sarcinæ ventriculi), and is also recommended by Dr. Jenner as a local application in cases of apthæ, attended with the formation of parasitic plant. He says that the secretions of the mouth being acid, the sulphurous acid is set free, and destroys the parasite in twenty-four hours.

but determines also towards the skin. The renal secretion may be encouraged by nitrate or acetate of potash, with fomentations to the loins; tepid sponging of the skin should never be omitted, and if the rash disappears flannels wrung out of hot water, or mustard and water, should be constantly applied to the body and extremities. The cold affusion is a remedy powerful for good or evil, according as it is used, and is rarely admissible in the class of cases which I have principally had to deal with.

Want of sleep is often a troublesome symptom in the typhoid, and occasionally also in the malignant variety of scarlatina, in both of which opium disagrees; but the application of two or three leeches to the temples, as recommended for the same symptoms in typhus by Dr. Corrigan, may be relied upon as a safe and certain means of relief. I have seen patients who had been restless, delirious, and wakeful for several nights, fall into a tranquil slumber while the leeches were still bleeding. Epistaxis often occurs during the course of typhoid scarlatina, and, as far as my experience goes, always with relief; but this bleeding must be distinguished from that depending on a hemorrhagic tendency, which Dr. Graves and others found uncontrollable and fatal in malignant scarlatina.

The condition of the throat demands much of the physician's attention in the last-mentioned form of the disease, as it is towards that part that the greatest intensity of the poison is directed. I cannot say that I have seen benefit from the application of powerful caustics and astringents, used with a view to changing or suppressing the action going on in the part; by their use it seems to me that inflammation is increased, and a sympathetic irritation of the sub-maxillary glands is added to that directly caused by the poison in passing through them. If the throat affection was phagedenic ulceration, then I could anticipate benefit from destroying the ulcerating surface; but when a phlegmonous or erysipelatous inflammation, such as I have generally met with, is tending rapidly to gangrene, anything which increases the inflammation increases also the disposition to gangrene, or even creates it when absent, just as a blister applied to the surface generally does. If there is a decided tendency to exudation of a diphtheritic character, the application of a solution of the tr. ferri perchloridi (one part to two or three of honey) is very useful; but even these must be applied with caution. In the milder form of throat affection weak solutions of nitrate of silver seem to act beneficially, by coagulating the morbid secretions and causing them more ready expulsion.

Acidulated gargles may be used with the same intention by adults; but in prescribing topical treatment of any kind for young children we must exercise our judgment to determine whether the benefit to be derived is sufficient to compensate for the terror and distress it generally causes the little patient. My own experience is, that in many cases it may be omitted.

If we would treat the throat affection in malignant scarlatina successfully, we must remember that it is a symptom of a general disease; that a poison generated in the blood is directed towards the part, and that re-inoculation may take place from the putrid secretions which are thrown out upon the lining of a partially closed cavity. This view of the local disease would lead us to place much reliance upon antiseptic treatment, applied through the general system; upon emollient applications, such as fomentations and poultices, calculated to impart the heat and moisture which favour the conversion of toxic into normal compounds, and thus encourage, rather than retard, the attempts of nature to rid the system of an impurity. It would also indicate the washing away of putrid secretions thrown out of the blood, in order to prevent their re-absorption. A ready appliance by which this can be accomplished is to be found in the poorest house, in the shape of the common india rubber ball, used as a plaything by boys; this can be easily filled with warm water, or strained barley water, which the attendants readily learn to inject into the nose and mouth, affording much relief, and tending to prevent secondary inoculation of the blood. The addition of chloride of zinc, soda, or lime, or of chlorate of potash, may be beneficial when there is fetor, or a solution of bi-sulphite of soda may be used in the same manner.

I have yet to speak briefly of two important points in the treatment of scarlatina, viz., diet and hygiene; the former of which must vary according to the type of the disease. Broth and wine should be commenced early in the typhoid and malignant forms, and pushed in small and frequently-repeated quantities; mucilaginous drinks and cold water may be allowed, according to the patient's desire; and I believe that, within certain limits, the more fluid is taken the more free is the elimination of the poison. It is seldom advantageous to allow broth or stimulants in the typical variety, until convalescence is pretty well established, as strength can be sufficiently supported by slops and milk diet. Hot brandy and water must be freely used—when the stomach will tolerate them—in most congestive cases of scarlatina, to support the ebbing powers of

life, and promote reaction; but its effects must be carefully watched, and its use suspended when the latter is established. One of the most important points in the treatment of every form of scarlatina is to ensure purity and change of air for the sufferer. The two largest and best-ventilated rooms in the house should be prepared by removing carpets and curtains, opening windows from above, and providing every facility for the rapid and complete removal of impurities. The little patient, or patients, should occupy these rooms on alternate days, being carried, bed and all, from one to the other. However inconvenient such measures as these may be, they should be insisted on when at all practicable, as the influence of decomposing animal excretions upon scarlatina is most destructive. I remember being called to attend a patient in one of two houses, situated in the centre of a field, which was in process of being manured with cesspool stuff; the stench was intolerable. There were nine children in the two houses, and in a few days they were all struck down by scarlatina of so intense a character that three died. (The mother of one of these families had died a few months before of typhoid fever.) Condy's ozonized fluid, or other disinfecting compounds, should also be sprinkled freely about the apartments, placed in vessels, &c., &c., and the bed-linen and clothes frequently changed. Much also depends upon skilful nurse-tending. In illustration of the importance of all these matters I may mention that during the epidemic of 1862–3 the mortality in my dispensary practice was ten in ninety-four cases, and in private practice not one death out of nine. Indeed I often wonder how any escape among the poor, as, besides the closeness and dirt of their apartments and beds, the mother of five or six children, lying dangerously ill, generally becomes beside herself from the combined influence of want of sleep, anxiety, panic, and ineffectual efforts to perform the duties and provide the necessaries for all.

I shall not enter into the consideration of the sequelæ of scarlatina, having already so far transgressed my limits, and shall conclude with a few remarks on a most common complication of scarlatina—inflammation of the ear. It commences generally about the tenth or twelfth day with pain, which usually lasts about twenty-four hours, when it subsides, and is replaced by partial or complete deafness, and discharge from the meatus. The hearing is often *entirely* lost in a day or two, after which it is almost completely restored, and then again gradually diminishes to a certain point, leaving the patient rather " hard of hearing " than deaf. This

sequence of symptoms, which I have observed in a great number of instances, seems inconsistent with the generally received opinion that the ear affection is due to an extension of the throat inflammation along the Eustachian tube to the cavity of the tympanum; and not less so is the fact, which I have often observed, that there is no ratio between the progress or severity of the two affections. I have noted many cases of severe otitis when the throat had been scarcely at all affected, and others when ulceration, and even sloughing, of the throat, proceeded through all its stages, without accompanying affection of the ear. These facts induce me to believe that in many cases the ear complication of scarlatina is an independent affection; and, from the train of phenomena presented by it, I would argue that it is upon the membrana tympani that inflammation first lights, causing suppuration of the adjacent parts, and rapidly running on to perforating ulceration of the membrane itself That the latter early takes place is proved by the fact that, after a few days, lotions injected into the meatus are tasted in the mouth. From the membrane inflammation sometimes spreads into the cavity of the tympanum, destroying the ossicula, and working the ruin of the auditory apparatus; thence it may spread to the petrous portion of the temporal bone, causing abscess of the brain or its membranes— a striking specimen of which was laid before the Cork Society last session by Dr. Albert Purcell; or an abscess may open into the cavernous sinus, and give rise to general phlebitis, or uncontrollable hemorrhage. But instances of this kind are exceptional, for the inflammation generally stops short at the membrane first affected, and, notwithstanding considerable perforation, hearing may be completely restored. I have seen many cases which issued thus favourably; and in one, so great was the perforation of both membrana that one of the first aurists of the day, to whom I sent the patient, wrote to me saying that he feared there was little prospect of palliation without the introduction of artificial membranes, and yet hearing was completely restored without any mechanical appliances. In one of my cases the abscess took an outward direction, burrowing under the cartilage of the ear, causing necrosis, and a subsequent complete separation of a layer of the mastoid process of the temporal bone, and recovery.

Art. III.—*On the Surgical Treatment of Vesico-Vaginal Fistula.*
By Awly P. Banon, M.D., F.R.C.S.I., and Member of Council
of Royal College of Surgeons, Ireland; Surgeon to Jervis-
street Hospital, &c.

Perhaps in the annals of modern surgery there is recorded no
more important or gratifying fact than the improved method of the
surgical treatment of vesico-vaginal fistula, adopted with such
success within the last few years. All of us are old enough to
remember when scarcely any hope of relief could be held out to
those unhappy beings afflicted with this loathsome affection; but
now a certain cure, with very rare exceptions indeed, may be
promised to them. A certain amount of skill and dexterity is
alone required to convert the state of these poor women from one
of misery, rendering life a burden, to one of perfect happiness and
comfort. The most frequent cause of this affection is undoubtedly
from the too long impaction of the fetal head within the os externum
during labour, giving rise by its pressure to the death and sloughing
of a portion of the vesico-vaginal septum. The symptoms, under
these circumstances, do not appear until the sloughs separate, days
and sometimes weeks after the confinement; but, in the more rare
cases, where the membrane is rent by the use of instruments, or in
the operation of turning, particularly when the bladder has not
been previously emptied, the symptoms occur from the moment of
the accident. It may be here as well to state that there is but too
much reason to fear that these accidents too often result from want
of proper care and treatment during the progress of labour. I
believe it to be now the opinion of most obstetricians that too long
delay in assisting the delivery of an impacted head may lead to
this as well as other bad consequences. In one of the cases I shall
detail, the cause of the production of the fistula was from the
ulceration produced by a large calculus which eventually made its
way from the bladder into the vagina. Other causes are stated of
which I have not met with any instances—such as cancerous
ulceration, undue pressure of a pessary, and criminal attempts
at abortion. However caused, there can be no mistaking the
symptoms by which this lesion is accompanied. The patient
unable to retain a drop, or at most a very small quantity of urine,
has it constantly dribbling from the bladder, and scalding and

excoriating the vagina and the parts external to it, the offensive urinous smell from her person rendering her an object of disgust to herself as well as to others. These symptoms were present to their fullest extent in all the cases which came under my notice, and I can hardly conceive any class of diseases more loudly appealing to the surgeon for relief. Their occurrence is principally amongst the poorer classes, and it is humiliating to think there is but too much reason to believe it is because they do not receive that care and attention, in many instances, in this their most trying ordeal, which is so necessary to them, and which those more fortunate can command. As a general rule, I know the fault does not lie with the profession, but with the system by which it is rendered physically impossible for many medical men to attend to the various calls for their services in country districts.

In a paper like the present it would occupy too much space to enter into a detailed history of the different operations proposed, and the various instruments used, for the cure of this affection. In Baker Browne's *Surgical Diseases of Women*, and in other publications, full information on these points can be obtained. Twelve or thirteen years ago scarcely anything had been done. It is true that from a long period occasional success followed the use of the knife and sutures made of silk or thread, as well as various modes of cauterization, in the hands of such men as Dieffenbach, Delpech, Velpeau, Jobert, Collis, Kennedy, Liston, and others; but failure was so much more usually the result, that the treatment of this affection was justly considered the opprobrium of surgery. Gosset was, I believe, the first to recommend the use of metallic sutures, and successfully operated in London in 1832, using gold wire; but his recommendation was not followed until Dr. Marion Sims of New York, published in 1852 his improved method of performing this operation. So far back as 1837, Dr. Evory Kennedy, of this city, operated successfully, using the twisted suture secured with perforated shot. Since this period Bozman, Baker Browne, Simpson, and many others, have paid particular attention to this branch of surgery, and brought it to its present comparatively perfect state.

The first time I was present or assisted at the operation was in a patient sent to me from the country, but on whom I did not choose to operate, having then no experience in the matter. I therefore placed her in the hands of my friend, Dr. Beatty, who performed Bozman's operation on the 31st of May, 1859, with the most perfect success. Dr. Churchill was also present, and the case was

shortly afterwards published by Dr. Beatty. Not long afterwards I had several opportunities of undertaking the operation myself, and was ably assisted by Dr. Beatty in all of them with the exception of one or two which took place during his late severe illness. The mode of operation which I followed in the first three or four cases was that recommended by Dr. Bozman, of Montgomery. Placing the patient resting on her hands and knees, Bozman's bent speculum is introduced, by which the vagina is dilated and the perineum retracted. By this means the fistula is exposed to view, and will be found to vary in size, in different cases, from a small pin-hole to a very large opening indeed. Before proceeding to operate the bowels should be freely emptied, and their further action as much as possible guarded against by a suitable diet, and repeated small doses of opium, so important is it that as little disturbance as possible of the pelvic viscera should take place during the healing process. The period of the operation should be at least ten days before the expected occurrence of the catamenia, for obvious reasons. The fistula being exposed to view, the first step of the operation will be to carefully pare its edges, and the second to bring the lips accurately together by as many points of suture as its extent may render advisable. To effect these objects the surgeon must be provided with a variety of instruments, such as hooks and vulcella of various kinds, straight and curved knives and scissors, tubular and other needles of different curves, straight and curved forceps, wire twisters, porte aiguilles, and other contrivances which the peculiarity of cases may render necessary. In Baker Browne's work, before mentioned, the reader will see delineated most of the instruments now in use, as well as others, such as clamps, buttons, perforated shot, &c., not now, as far as I am aware, much used. For very small fistulæ, particularly when situated high up in the vagina, I have myself contrived an instrument which I shall endeavour to describe, and which I found of much use in fixing and bringing within easy reach of the knife the edges of the aperture. The instrument, as will be seen by the annexed wood-cut, is a curved steel sound or probe, provided with four elongated points projecting backwards. It may easily be forced into the smallest aperture, and on withdrawing it will grapple the margin of the fistula on every side, and enable the operator to divide it with the greatest ease. Its introduction will be much facilitated by previously passing a sound through the urethra into the bladder, by which the membrane can be made tense and raised towards the

operator. The necessity of some such instrument suggested itself to me in August, 1863, in the case of Mrs. Quanby, which is one of those I am about to detail. In her case the vagina was contracted, and the fistula, a mere pin-hole, situated very high up, the instrument proving of much use in bringing it within reach. I subsequently used it, and assisted Drs. Kidd and Cronyn, who recently operated in cases of this form of fistula, and found it greatly to facilitate their operations. In my earlier operations, after paring the edges and introducing iron or silver wire sutures, I followed the plan of Bozman, of using a leaden plate perforated with a double row of holes corresponding to the number of sutures intended to be used, and cut to the proper size, on which the sutures were twisted; but though I found it to answer well, I have latterly omitted it as unnecessary, and have followed the more simple plan of Marion Sims, of twisting the silver sutures down on the divided parts, having, of course, previously brought them accurately into apposition. I had the advantage of seeing Dr. Sims operate when in Dublin, two years since, and had several conversations with him, and was so struck with the simplicity of his method that I have since then, to a great extent, followed it. The position recommended by Sims is the semi-prone, which is much less harassing to the patient as well as to the operator than that on the hands and knees recommended by Bozman. This latter will, however, in some cases be found convenient, as will also that of the lithotomy position recommended by Baker-Browne. Chloroform may be advantageously used in the semiprone or lithotomy positions, but not in that resting on the hands and knees. After the operation the patient should be kept quiet, and the bent or syphon catheter introduced and left in the bladder, changing it every day, or oftener if required, until the 8th or 9th day, when the sutures may be removed, and the patient allowed to pass urine by her own efforts. I am aware that some surgeons do not consider this course necessary, and dispense with the catheter altogether.
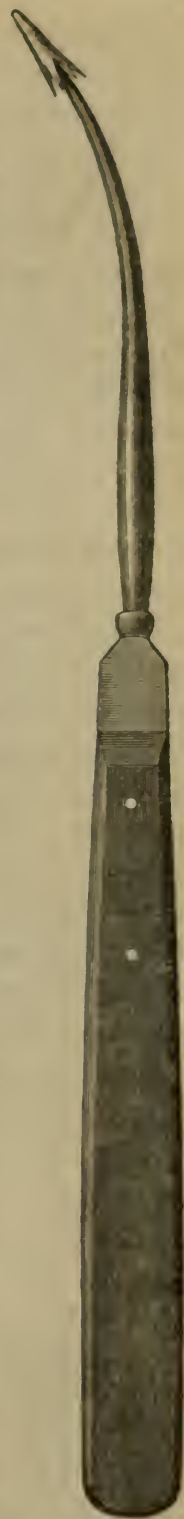
Of the results of this practice I have no experience, having never tried it, but knowing that all strain must be kept off from the recently divided parts by the retention of the bent catheter in the bladder, and that it is generally borne without much discomfort, I should be slow in giving up its use.

The following cases comprise ten of fistula—eight being vesico-vaginal, one utero-vesical, and one recto-vaginal—all of which were perfectly cured, with the exception of one, which, had she submitted to a second operation, would probably also have been cured. The cases were all seen, and the results known to Dr. Beatty and other friends, who saw the patients before, during, and after the several operations. I have added an interesting case of lacerated perineum and rectum, with occluded vagina, also operated on by me with success; and have at present under my care two cases of vesico-vaginal fistula (one sent me by my friend Dr. Fleming), possessing features of unusual interest, upon which I intend soon to operate, and hope to add to the list of those cured. I have purposely avoided describing the many other operations proposed and attempted for the cure of these affections, having simply confined myself to a description of the cases I have met with, and with the proceedings I adopted for their cure, and would refer the reader to the works and communications on these subjects of Browne, Bozman, Sims, Simpson, and others, who have so largely contributed to the advancement of this branch of surgery. It would be idle to state that success in these operations can be attained without entailing much trouble and loss of time on those who undertake them; but there can be as little doubt that their results rank them amongst the most important improvements of our art, and afford to the surgeon, as well as to his patient, the most unmitigated satisfaction. Whatever success I have had, I, in a great degree, attribute to the able assistance of my friend Dr. Beatty, and the zeal with which the resident pupils of the hospital attended to the treatment of the patients after the operation; amongst whom I may mention Messrs. O'Loughlin, Maunsell, Redmond, and Dudley White. To Messrs. Thompson and O'Neili I am indebted for the manner in which the various instruments were manufactured, and for the intelligence with which they, on all occasions, adopted any suggestions given to them.

It will be seen that in two of the cases mentioned the operation at first proved unsuccessful, and it was only after several attempts that the fistulæ were at length closed, and the patients cured of all their distressing symptoms. In the remaining cases one operation

sufficed. In the ninth case given, the reader will find an interesting instance of utero-vesical fistula. Had the application of caustic not succeeded it would have been a question whether the closing of the os uteri by operation might not have been attempted. For information on this interesting subject the reader is referred to Mr. Lane, on Cure of Vesico-uterine Fistula, Os Closed by Suture, *Medical Times and Gazette*, 10th January, 1863, and Subsequent Conception, *Medical Times*, 20th February, 1864. See also Wells, *Medical Times and Gazette*, 17th January, 1863; Browne, *Lancet*, 5th March, 1864; *British Medical Journal*, 6th December, 1862.

ONE OPERATION—CURE.

CASE I.—Catherine Ormond, a healthy married woman, aged nineteen, was sent up to me on the 29th September, 1860, by Dr. Noble Seward, from Cahirconlish, labouring under vesico-vaginal fistula. Three months previously she had been delivered of her first child, dead born, after a very severe and tedious labour, lasting three days. For the first three weeks after her confinement she felt no inconvenience in passing her urine, but she then lost all power of retaining it. On examination an oval fistula, three-quarters of an inch in length, and occupying the upper part of the septum, was at once perceived lying in an obliquely transverse direction, with a portion of the mucous membrane of the bladder protruding through it. On the 15th of October I proceeded to operate, assisted by my friend Dr. Beatty, and my hospital colleagues; the bowels having been previously well emptied, and a grain of solid opium administered. I was enabled, with some trouble, to remove the whole edge of the fistula without a break, and afterwards brought the lips together with five iron-wire sutures, using the lead plate recommended by Bozman. A catheter was retained in the bladder, changing it every day, until the sutures were removed on the ninth day, when the fistula was found to be healed in every part, and the complete power of retaining the urine restored. She left the hospital in a few days afterwards, perfectly well, and has since borne children without any recurrence of her malady. The chief difficulty in this case arose from the fistula being situated far up in the vagina, close to the os uteri, and the narrowness of the vagina; but the bent speculum of Bozman, held by Dr. Beatty, enabled me to overcome it.

ONE OPERATION—CURE.

CASE II.—Mary Jordan, aged twenty-six, consulted me from Celbridge, on the 4th of June, 1861, and was admitted to Jervis-street Hospital. States that two years and five months previously she was delivered, by instruments, of her first child, a male, and that in a few days afterwards she observed the urine to flow involuntarily from the vagina, which it has continued to do ever since, without her being able to retain the smallest quantity. Some months afterwards she was operated on in one of the Dublin hospitals unsuccessfully, and again in another hospital a short time since, without any amendment in her symptoms. On examination, the vesico-vaginal septum was found indurated and puckered in the site of the former operations, and an irregular, jagged fistula, half an inch in length, was observed lying obliquely in the upper portion of the membrane. Assisted in this case also by my friend Dr. Beatty, and my colleagues, I proceeded to operate on the 7th of June, 1861, in the same manner as in the preceding case, using silver instead of iron wire. I considered it necessary also to remove the greater part of the indurated structure surrounding the fistula, so that, when pared, the opening was upwards of an inch in length, and required six sutures to bring it together. The treatment before and after the operation was the same as in the last case; and, on removing the plate and wire sutures on the ninth day, I was gratified to find the parts perfectly healed. She left the hospital, perfectly well, on the 26th of the month, and has never since suffered the slightest inconvenience. About a year and a half subsequently, being near her confinement, she was examined by Dr. Denham and myself, and we could scarcely see a trace of the cicatrix resulting from the operation. A few days afterwards she was safely delivered of a full-grown child, without any injury to the parts.

THREE OPERATIONS—CURE.

CASE III.—Mary Shanahan, aged thirty-one, was sent up to me by Dr. Riordan, of Bruff, County Limerick. Has been twice delivered with the aid of instruments. On the last occasion—the 6th January, 1861—the delivery was immediately followed by inability to retain any portion of her urine, and in this state I admitted her to hospital on the 21st of February, 1861. On examination a large, somewhat circular, opening was exposed in the upper portion of the septum, with the mucous membrane of the

bladder protruding considerably. Again assisted by my friend Dr. Beatty, I proceeded to operate in a similar manner as in the two previous cases, using five silver wires; but, on removing them on the eighth day, the fistula was found to be only partially healed, and the distressing symptoms remained as bad as ever. On the 13th of the same month I again operated, with the same result; and, deeming that the second operation followed too soon after the first, I deferred operating a third time till the 12th of April. This operation proved perfectly successful, the woman leaving the hospital, not suffering the slightest inconvenience, on the 3rd of May, 1861. Three months after Dr. Riordan writes:—" Your poor patient paid me a visit at the dispensary this day. She is quite happy, being as well as ever she was in her life."

FOUR OPERATIONS—CURE.

CASE IV.—*Several other Operations having been previously performed by other Surgeons, ineffectually.*—Catherine Hill, aged thirty, was admitted to Jervis-street Hospital, under my care, in 1861. States that she was confined eight years since, after a lingering labour of four days; believed herself to have been injured by the interference of an ignorant midwife, as, from the moment of her confinement, she had no power to retain her urine. Applied at different hospitals for relief, and was thrice operated upon without effect. She is pale and delicate-looking, and appears to have undergone much hardship, being a soldier's wife. On examination I found a rather small angular fistula, situated low down and to the left side of the vesico-vaginal septum. Operated in the usual way, assisted by Dr. Beatty, on the 9th June, 1861, but without any good result, scarcely any attempt at the healing process following, though the parts were brought and kept very accurately in apposition. At the end of the month I again operated, and failed in healing the fistula. As the patient's health was evidently in a bad condition, and a state of great irritability and constitutional irritation having followed the last operation, I advised her to leave the hospital for the country, and return to me in three months. At the end of this period, her health being somewhat re-established, I again operated, this time following the plan of Marion Sims, omitting the use of the leaden shield or plate, and simply twisting the silver-wire sutures down on the divided parts. This operation was attended with only partial success, a large portion of the fistula

having healed, but sufficient remaining open to cause a continuance of all her distressing symptoms. However, in some time afterwards, after consulting with Dr. Beatty, I determined once more to operate, and did so on the 21st of October, 1861, following Sims' method, and this time with complete success. On removing the sutures, four in number, on the eighth day the parts were found perfectly healed; and, although obliged to pass her urine very frequently, she has regained the power of retaining it in the intervals perfectly. She returned to her native air in County Longford by my desire; and, on my next seeing her (August, 1862), expressed herself as quite well in every respect.[a]

ONE OPERATION—CURE.

CASE V.—Catherine Hayes, aged thirty-five, sent up from the County Limerick, admitted to hospital December 17, 1862, had been confined the month previous, with the aid of instruments, of a dead child; immediately afterwards found she could not retain her urine. This woman, three years previously, had been similarly affected from her first labour, and on 31st May, 1859, had been operated on with perfect success in my presence by Dr. Beatty, and continued without the slightest unpleasant symptom up to her recent confinement, when a large rent took place in the vesico-vaginal septum, in the site of the former fistula. On examination, a large oval opening, an inch and a quarter in length, was observed lying transversely, high up in the vagina, with the vesical mucous membrane protruding. On the 22nd December, assisted by Dr. Beatty, and in presence of other friends, I operated, following Sims'

[a] Some time after Catherine Hill reported herself as quite well, she called upon me in a state of great trouble, saying she was as bad as ever, and giving the following account of her relapse. For some time she retained power of her bladder, but was annoyed by a sense of fulness, and occasionally severe pain, near the neck of this organ. At length the pain became almost intolerable, and she was enabled to feel a distinct hard substance, near the site of the former fistula, which eventually ulcerated its way into the vagina, leaving a larger aperture than ever between it and the bladder. This proved to be a large calculus, which she brought to me. This poor woman's health was now so broken, and her spirits so depressed, that it was not considered advisable that an operation should be then undertaken. Her subsequent history is the following:—She called at the hospital for the purpose of again being operated on by me; but, hearing that I was unwell, she went to another surgeon, who operated on her with temporary success. She, however, called on me again, on 14th December last, when, assisted by Mr. Maunsell, I examined her, and found a minute aperture, through which the urine comes nearly as bad as ever, but which I hope to be able soon to close.

method; and on removing the six silver sutures on the eighth day was gratified to observe this large fistula closed at every point. She left town on the 10th of January, 1863, perfectly well in every respect, and has, as I am informed by her husband, continued so up to the present time.

ONE OPERATION—CURE.

Case VI.—Mrs. Brennan, aged twenty-six, was sent to me in July, 1863, by Dr. M'Swiney; states that she was taken in labour of her first child in 1856, that she remained without assistance from Monday morning until Thursday, when she sent to Leixlip for a doctor. Delivery by the crotchet was performed; up to next morning she had passed no urine, when, on the introduction of the catheter, it suddenly gushed into the vagina, from which time she has never been able to retain the smallest quantity. Two years subsequently she was confined of a living female child without any assistance, and twice afterwards, in the Lying-in Hospital, the crotchet had to be used—the last occasion in April, 1859. Since then she has not proved pregnant. On examination a very large fistula was exposed to view, lying in a transverse position about midway up the vagina, fully an inch and a quarter in length, the mucous membrane of bladder protruding very much at its upper part. On attempting the introduction of a catheter the urethra was found completely occluded. The first proceeding adopted was to make the urethra pervious, which was done by the introduction of a large trocar, the canal being afterwards kept open for some days by a No. 12 gum-elastic catheter. On the 20th August, she being considered in a fit state for the operation, I performed it in the usual way, using six sutures, assisted by Dr. Beatty and Dr. Spencer Wells, of London, who happened to be in Dublin at the time. The syphon catheter was used for eight days, when the fistula was found healed in all its parts, with the exception of a minute aperture at the left angle of the wound, which in a few days closed. She has regained the power of retaining her urine perfectly, and called upon me on the 8th of last December to say she continued quite well. She has not since become pregnant.

ONE OPERATION, FOLLOWED BY SEVERE INFLAMMATION OF BLADDER AND VAGINA, RELIEVED BUT NOT CURED

Case VII.—*Fistula of thirty years' standing*—Mrs. Quanby, aged sixty-seven, resident in South Wales, was admitted to Jervis-street

Hospital on the 8th of August, 1863; states that thirty years previously she had been delivered of a dead child, having been three days in severe labour, when instruments were had recourse to. Ever since then her life has been one of misery, not being able to retain a drop of her urine in any position. On examination with Bozman's speculum, which could with difficulty be introduced owing to the contracted condition of the vagina, a small aperture was exposed in the upper portion of the vagina, partly concealed by the os uteri. The greater part of the vaginal canal was coated with phosphatic deposit, and the vagina and external parts much excoriated. She was recommended to have the vagina frequently syringed with warm water, and after some days the mucous membrane presented a healthier appearance. I now saw that the great difficulty of the operation would be to bring so small and so distant a fistula within reach of the knife, and it was in this difficulty that the instrument already described suggested itself to me. Accordingly on the 21st of August I operated, assisted by Dr. Beatty, Dr. Spencer Wells, and other friends. I found no difficulty in paring the edges of the fistula, which was brought within reach by the instrument before referred to, but from the narrowness of the vagina, and the distant position of the aperture, I had some delay and trouble in passing the sutures through.[a] In this, however, I succeeded, and Drs. Beatty and Wells expressed themselves much pleased at the ease with which the instrument I have described enabled me to overcome what might otherwise have been a serious difficulty. For the first two or three days this patient got on well, but she then became feverish, the vagina hot and painful, the bladder irritable and unable to bear the presence of the catheter, which had to be discontinued. The urine now came through the fistula as before the operation; it was therefore determined to remove the sutures lest they might contribute to the irritation present, which was done on the fifth day after the operation. She remained in the hospital until the 24th of September; and being now able to retain a very small portion of the urine, obstinately refused to have another operation performed, or even to submit to an examination of the parts. She was for several days in a high state of fever, which gave us some uneasiness; but, notwithstanding which, I much regret she did not submit to a second operation, which would very probably have proved successful.

[a] Two sutures only were necessary in this case.

ONE OPERATION—CURE.

Case VIII.—Mary Shanahan, aged thirty-three, was admitted to hospital on the 12th October, 1863, with a small transverse fistula about half way up the vesico-vaginal septum. She was formerly the subject of fistula, and cured, by me, in 1861—her case being the third related by me. Since that period she has remained perfectly well, and, by my advice, entered the Lying-in Hospital on the 1st of August, 1863, at her third confinement, having been twice previously delivered by instruments. She was taken in labour on the 15th August, at 8, p.m.; in three hours the labour had advanced to the second stage, but not making progress she was delivered by the forceps, with the utmost care, at 7·40 next morning, of a healthy living child, but owing to the thinness of the membrane a small rent took place below the site of the former fistula. Her health being delicate, she was kept in the hospital until the 12th of October, when I admitted her to Jervis-street Hospital for the purpose of operating. The fistula was small and within easy reach of my small instrument, before described. The patient's health was delicate and her spirits much depressed by the recurrence of all her distressing symptoms, and the recollection of all she had gone through two years previously, before her cure was effected. On the 19th of October I proceeded to operate in the presence of Drs. Stapleton, Hughes, M'Donnell, and M'Swiney, this time not being so fortunate as to have the assistance of Dr. Beatty. My barbed instrument was easily introduced; and on withdrawing it the edges were completely transfixed and rendered quite easy to remove by an elliptical incision, including the fistulous aperture. The divided parts were brought together with three silver sutures, which were removed on the eighth day, leaving the fistula perfectly healed. The operation only lasted a quarter of an hour. She left town quite well, in every respect, on the 7th of November, 1863, this time having also the happiness of bringing home a fine healthy living child.

Case IX.—*Utero-Vesical Fistula Cured by Cauterization.*—Mrs. H., aged thirty-six, was brought to me by my friend, Dr. Seward, in the beginning of May, 1862. Some months previously she had been delivered by the use of instruments, and shortly afterwards the urine came dribbling through the vagina, and she became unable to retain any portion of it. On examination no fistula could be detected in the vesico-vaginal septum; but the urine was seen

dropping from the os uteri into the vagina. The os itself was extensively torn at its posterior margin. On several occasions Drs. Beatty, Seward, and I, endeavoured to obtain a view of the fistulous opening into the bladder, but without success, and I was therefore obliged to be content with touching its supposed site freely with nitrate of silver, and on a subsequent occasion with strong nitric acid. These caustics were passed through the os uteri to the point where we considered it likely the opening existed. She was afterwards kept quiet for several days with the bent catheter in the bladder, and left town capable of retaining a large quantity of urine. I have since then had the most pleasing accounts of her progress from my friend, Dr. Seward. I had some time afterwards the pleasure of assisting Dr. Beatty in a similar case, in which the same course was adopted with complete success.

<div align="center">ONE OPERATION—CURE.</div>

Case X.—*Recto-Vaginal Fistula of Large Size.*—Mary Shea, aged thirty-four years, a prisoner in the Mountjoy Female Prison, to which she was committed on the 18th July, 1861, states that her first confinement took place eight years previously, in the Tralee Poorhouse. Her labour lasted upwards of three days, when she was delivered, without assistance, of a living child. For some weeks she got on tolerably well; but then found that on attempting to pass the feces the greater portion, if not the whole, came through the vagina. She subsequently contracted syphilis, and again became pregnant, and gave birth to a dead child in September, 1855, since which time till her committal, she led a loose life.

On examination the state of the parts was the following:—The vagina presented an irritable appearance, particularly at its posterior aspect, on the lower portion of which a large quadrilateral opening, with hardened edges, was seen communicating with the rectum, about an inch above the anal opening. Three or four small pendulous tumours were attached to the vaginal mucous membrane, and somewhat obscured the opening till drawn aside. It was also found, on examination by the finger, that she was the subject of stricture of the rectum, fully three inches above the anal opening. The pendulous tumours were removed; and after the parts had healed I determined to close the aperture by the same operation as that performed for the cure of vesico-vaginal fistula. With the assistance of Drs. Beatty and Robert M'Donnell, I freely removed the

indurated edges, and brought them together with six wire sutures, on the 10th of October, 1861, using Bozman's perforated plate. The bowels had been well emptied previous to the operation, and guarded afterwards by the administration of opium in half-grain doses, twice or thrice daily, notwithstanding which, they frequently acted during the ten days the sutures were allowed to remain in. This I afterwards supposed to be owing to the irritation produced by the stricture of the rectum, the cure of which I regretted I had not undertaken previous to operating. On the tenth day I removed the sutures and plate, and found the opening healed, with the exception of the central portion, in which I placed two fresh silk sutures, and allowed them to remain for a week longer, by which time the opening had completely healed. She suffered some inconvenience from the stricture of the rectum for some time, which was relieved by division, and the subsequent introduction of bougies, which she still occasionally requires. On examination, the site of the former opening can with difficulty be detected, so firm and complete has the union been.

<div align="center">TWO OPERATIONS—CURE.</div>

Case X.—*Complete Rupture of the Perineum, with Laceration of the Rectum—Occlusion of the Vagina.*—Bridget Lawlor, aged twenty-six, was confined on December 20, 1863, of a dead male child, having been four days in labour. Though her first confinement, she had no other assistance than from a woman who, she states, used much violence in her efforts to deliver her. After her confinement she suffered much for some weeks, and was unable to restrain her motions, having lost all power over the sphincter. On admission to the hospital, on the 28th of February, her state was truly a lamentable one; the perineum was completely ruptured, and the rectum lacerated for upwards of two inches and a-half. It was also found that the remaining portion of the vaginal canal was completely occluded by the firm adhesion of its sides. Her health had suffered much, and the menstrual discharge had, of course, not appeared since her confinement, there being no outlet for it; on consultation it was thought best, in the first instance, to attempt the restoration of the vagina, and on the 5th of March, assisted by Dr. Beatty and and Professor Haughton, I proceeded to do so in the following manner:—The patient being placed as in the operation for lithotomy, and some chloroform, which she did not bear well, administered, a few horizontal touches were given cautiously with a small straight

knife, in the direction of the vagina, so as to divide the adhesions sufficiently to admit the little finger to some extent. Sponge tent was subsequently used, and in some days the new canal was so far dilated as to admit the index finger. Further similar attempts were subsequently made with the effect of still more dilating the canal, and giving exit to the menstrual discharge, but at no time could the uterus be reached by the finger owing to the adhesions which still occupied its upper part.

The extreme thinness of the wall between the bladder and the newly-formed vagina, combined with the patient's great delicacy of health, induced me now to desist. She was sent to the country, and advised to continue the sponge tent, and return when her health was re-established sufficiently to undergo another operation. On the 5th of May following she was again admitted, in a much improved state. The catamenia had taken place to a slight extent, proving that though the uterus cannot be reached by the finger, a communication exists. I considered the risk of opening into the bladder or rectum too great to make any further incisions, and therefore turned my attention to the lacerated rectum; and, on the 11th of May, assisted by Drs. Stapleton and Hughes, I freely pared the lacerated edges, and secured them with three points of silver wire suture, intending, at a subsequent period, to attempt the cure of the remaining portion of the ruptured perineum by the operation recommended for that purpose by Baker Browne. The bowels had been freely emptied previous to the operation, and opium given, and the catheter used, at regular intervals, until the ninth day, when the sutures were removed and the lacerated rectum found quite healed. During the whole of this period the bowels had not acted, nor until the thirteenth day, when a copious motion took place, causing slight injury to the united parts, which was, however, in a few days repaired. She now has recovered complete power over the sphincter, and expresses herself most grateful for what has been done for her. She cannot, however, remain to have her cure completed, as her husband is about sailing with her to America, where I trust she may obtain whatever further surgical assistance her case may require.

Art. IV.—*Notes in Medicine and Surgery*—III. By Philip Crampton Smyly, M.D., F.R.C.S.I.; L.K. & Q.C.P.; Surgeon to the Meath Hospital, and to the Institution for Sick Children, Pitt-street.

The subject of enlarged tonsils has met with much attention and extensive observation; and yet there are few diseases on which authorities differ so much as to the nature of the disease, the use of the organs in health, the effects produced by the disease on the system generally, or the connexion of these glands, whether diseased or not, with other glands, however remote. The indication for treatment is simple enough in theory, namely, to diminish to size of the glands. Many and various are the means recommended; and the question as to whether the whole enlarged gland should be removed, or only a part, is not by any means settled. It is to a somewhat new mode of treatment I wish to direct attention in these notes.

When in London, last year, Dr. Mackenzie called my attention to a mode of treating enlarged tonsils by strong caustics, following Fournié. Fournié employed Vienna paste and bi-chromate of potash. Dr. Mackenzie uses what he calls "London paste;" it consists of caustic soda and lime. I saw several cases treated by him, and have treated many in the same way myself. In most cases I believe it to be very superior to any cutting operation.

I generally employ a piece of ivory, slightly roughened and hollowed at the end. Dr. Mackenzie formerly used a simple glass rod, but now uses a very ingenious instrument, made by Krohne. It consists "of a small shallow spoon, or receiver, into which the escharotic is put; the receiver is provided with a lid or cover, which, when the instrument is grasped in the hand, can be pushed forwards or backwards by the action of the index finger on a kind of trigger or half ring placed near the handle. The instrument is introduced closed, and, when opposite the tonsil, the lid is drawn back from the receiver, and the latter, with its contained paste, is pressed firmly against the hypertrophied gland for about five seconds; the lid is then pushed forwards over the receiver, and the instrument withdrawn."

This, of course, renders the application much more easy; though, with a little care, and a good light, such as is thrown into the pharynx by the laryngoscopic reflector, I find the piece of ivory quite manageable enough.

When applying the paste there are some cautions to be observed. 1st. The paste should be made rather thick and tenacious, and not lumpy. 2nd. Only a little should be taken upon the holder. 3rd. The uvula should not be touched. 4th. Some vinegar should be at hand, in case any part but the tonsil be touched. 5th. The patient must not be allowed to use any water after the application, but allow the saliva to flow freely from the mouth; even after some time I have found a little cold water bring on very considerable pain.

I find from five to ten applications sufficient to remove the enlarged glands in most cases. The advantages appear to me to be:—1st. The application is less painful than cutting. 2nd. It is never followed by dangerous bleeding; and even a little blood is a great loss to many who have large tonsils. 3rd. There is little or no inflammation set up, and therefore less chance of the lung becoming affected, as pointed out by Stokes. 4th. There is no dread of a surgical operation. 5th. It can be applied to the youngest children, and 6th. The rapidity with which the parts may be removed. It would be tedious to give cases in detail; it is sufficient to say, that, in all those I have treated in this way, I have not seen an unpleasant symptom.

Dr. Mackenzie, in comparing the " London paste " with caustic potash, observes " that it possesses the following advantages:—

" I. It tends to penetrate, rather than to spread.

" II. The action, though less violent at the moment of application, continues for a much longer time.

" III. It causes much less pain."

ART. V.—*The Immediate Treatment of Fracture by Fixed Apparatus.* By JOLLIFFE TUFNELL, F.R.C.S.I., M.R.I.A., Ex-Regius Professor of Military Surgery in Ireland; Surgeon to the City of Dublin Hospital; Examiner in Surgery, Royal College of Surgeons in Ireland, &c., &c.

WHEN, a few years since, Baron Seutin introduced his method of applying the starched apparatus, for the immediate treatment of fractures, it seemed as if the old plans, by means of wooden, iron, or other splints (for fracture of the leg especially), would be done away with altogether, and his system, only, adopted. Experience, however, proves that such has not been the case; and the practice of

the majority of surgeons in the United Kingdom at the present time is to resort to this appliance only when consolidation of the fracture has already been brought about by other means; in fact, to do nothing more than enable the patient to leave his bed a few days earlier than he otherwise would, had no such support been afforded. Some cause for the rejection of so valuable a plan would, of necessity, strike the most casual observer; and the reason soon came to be explained in the fact that, no matter how plausible the scheme in theory, in practice, it was found dangerous from constriction; and the occurrence of a few cases of gangrene (of the forearm especially), after fracture, sufficed to scare surgeons from its employment. Abuse soon led to disuse; and a line of treatment so peculiarly suitable to the country practitioner was speedily given up, or made exceptional in practice.

Being desirous of ascertaining the exact state of the case I placed myself in correspondence with the house-surgeons of the principal hospitals of the United Kingdom; and, through their kindness and courtesy, I am enabled to place before the readers of this Journal, in a tabular form, the mode of procedure now generally adopted in each respective institution, and the form of splint which is employed.

Return of Hospitals in the United Kingdom, showing the Material most generally employed in the Formation of Fixed Apparatus for the Treatment of Fractures, and the Periods when used for this purpose.

Hospital	Material Employed	Remarks
Aberdeen	Starch only	After some days
Aylesbury	,,	
Bristol	,,	
Canterbury	,,	When swelling has subsided
Cardiff	,,	Do. do.
Cheltenham	,,	Do. do.
Chester	,,	From a few days to five weeks
Cornwall	,,	After some days
Dorset	,,	After five weeks
Dumfries	,,	
Dundee	,,	After three weeks
Durham	,,	After one month
Essex	,,	After union
Glasgow	,,	
Gloster	,,	From four to fourteen days
Hereford	,,	After the second week
Hertford	,,	After the third week
Huddersfield	,,	Do. do.
Leith	,,	Do. do.

Hospital	Material Employed	Remarks
Newcastle . .	Starch only	After ten days
Perth . . .	,,	After four weeks
Portsmouth . .	,,	After eight days
Staffordshire . .	,,	From four to five weeks
University College	,,	When swelling has subsided
Westminster . .	,,	Single bone at once; both bones after four weeks
Worcester . .	,,	After fourteen days
Birkenhead . .	Starch and paste-board side splints	
Chichester . .	,,	After union
Derby . . .	,,	After five weeks
Greenock . .	,,	After union
Gray's . . .	,,	When swelling has subsided
Guy's . . .	,,	Do. do.
Northampton .	Starch and gutta-percha	After three weeks
Birmingham . .	Gum and chalk	After two weeks
Cambridge . .	,,	Single bone directly; both bones after union
Devon . . .	,,	After swelling has subsided
Halifax . .	,,	After five weeks
Leeds . . .	,,	After swelling has subsided
Leicester . .	,,	Immediately, if no swelling
Liverpool . .	,,	After ten days
Manchester . .	,,	After three weeks
Middlesex . .	,,	
Nottingham . .	,,	After union
St. Mary's . .	,,	Do.
Salisbury . .	,,	After three weeks
Salop . . .	,,	From fourteen days to three weeks
Sheffield . .	,,	After three weeks
Stafford . .	,,	After union
Sussex . . .	,,	After three weeks
Winchester . .	,,	From ten to twenty-one days
Wolverhampton .	,,	After partial union
St. Bartholomew's .	Plaster of Paris	
Exeter . . .	,,	Sometimes immediately
Lincoln . .	,,	Simple, after two days; comminuted, two weeks
Oxford . . .	,,	After union
South Devon .	,,	After one month
Taunton . .	,,	After union
Sunderland . .	Plaster of Paris and gum	
Bedford . .	Gum only	Single bone at once; both bones after fourteen days
Berkshire . .	,,	After three weeks
St. George's .	,,	
St. Thomas's .	,,	After swelling has subsided
Charing Cross .	Dextrine	After one month
Isle of Man . .	,,	After two weeks
Norwich . .	,,	After four weeks

Ireland.

Hospital	Material Employed	Remarks
Belfast . . .	Starch	After three weeks
Carrick-on-Shannon	,,	Seldom used; never at first
Cork, North . .	,,	Occasionally used
Cork, South . .	,,	Sometimes, after union
Donegal . .	,,	Occasionally
Dublin . . .		
Adelaide . .	,,	
City of Dublin .	,,	Egg and flour by Mr. Tufnell
Jervis-street .	,,	Plaster of Paris after swelling has subsided
Mater Misericordiæ	,,	
Meath . . .	,,	Plaster of Paris after swelling has subsided
Mercer's . .	,,	After some time
Richmond . .	,,	After subsidence of swelling
St. Vincent's .	,,	Glue occasionally after some time
Steevens's . .	,,	After three weeks
Galway . . .	,,	At once in non-complicated cases
Kilkenny . .	,,	After consolidation
Limerick . .	,,	Occasionally after consolidation
Lisburn . .	,,	Do. do.
Londonderry .	,,	Do. do.
Maryborough .	,,	Do. do.
Mullingar . .	,,	Do. do.
Waterford . .	,,	Do. do.
Wicklow . .	,,	Do. do.
Drogheda . .	Glue	Occasionally in restless cases
St. Vincent's .	,,	Dr. Mapother
Cavan . . .		Disapproved of
Monaghan . .		Do.

An analysis of these tables comprising the practice of ninety surgical hospitals in Great Britain and Ireland, gives the following result:—The various materials employed for the purpose of making fixed apparatus for the treatment of fracture of the leg are—starch— starch combined with pasteboard or with gutta-percha—gum and chalk—plaster of Paris—plaster of Paris and gum—gum only— dextrine and glue; and the relative degree of frequency with which each one is employed will be exemplified by the following detail:—

Starch, with or without side splints, in . 57 Hospitals.
Gum and chalk, in . . . . 18 ,,
Plaster of Paris, alone, in . . . 6 ,,
Plaster of Paris and Gum, in . . . 1 ,,
Gum, only, in . . . . . 4 ,,
Dextrine, in . . . . . . 2 ,,
Glue, in . . . . . . 2 ,,

Total, . . — 90

In this long list of hospitals the period usually adopted for the employment of the starch or other fixed material has been stated in the majority of cases; and yet, in seven instances only out of the whole number do I find the custom of early putting up of the fracture by it resorted to. Good reasons must necessarily exist for this line of practice to be so general and uniform, and the danger or risk from constriction of the limb by the starch bandage, as ordinarily employed, must, I consider, be regarded as the cause of its primary rejection, and employment only after swelling has subsided, or partial union of the bones taken place. I have, myself, for many years, in hospital and private practice, but especially in the latter, been in the habit of using a modification of the fixed apparatus, such as is not, I believe, described in any work, or otherwise generally known;[a] for, out of all the replies which I have received, I find allusion to it made only by one gentleman, viz., Dr. Turner, Senior House Surgeon of Guy's. I purpose, therefore, briefly alluding to the mode of procedure here; and, with the aid of the accompanying sketch, I trust that I shall be enabled to make the plan of action intelligible to all. The material required for forming these splints is very generally available, consisting only of lint or old linen for the inner lining; strips of the same, torn three inches in width, and long enough to reach from the head of the tibia to the sole of the foot. To make the splint itself:—The white of eight eggs and half-a-pound of flour for the fixing substance. These are all that are required; each and every one of which is to be procured in almost the poorest home—and as such, this splint is readily available to the surgeon in country practice.

The main feature of difference between this mode of setting fractures and every other kind of fixed apparatus, is the construction of the splint in two halves, and the applying of the bandage, which is to form the same lengthwise, instead of circularly, thus avoiding all possible sources of constriction of the limb.

Supposing, then, that the fracture has occurred in a city, or wherever else the most desirable materials are to be procured, the surgeon sends for the following, and places them beside him before interfering with the patient, further than to strip him of his clothes and lay him upon a properly prepared bed, upon the side opposite to the fractured limb—the leg itself being supported easily on a

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[a] For my knowledge of this plan I am indebted to some gentleman who informed me of it when accompanying me round the wards of the City of Dublin Hospital, and who told me that he learned it from the late Dr. Vallance, of Brighton.

pillow—and the fracture, as far as possible, reduced. The articles required are—a table for spreading the bandages upon, a wash-hand and small sharp-edged basin, eight eggs, and half-a-pound of flour, as before stated; a large iron or silver spoon, a large knife, three calico roller bandages, half-a-yard of Taylor's lint, and some hot water. The lint is first thrown upon the limb, from the knee to the sole of the foot, and cut roughly into the outline of the limb, of a size sufficient to tuck under the sole at the bottom, and from side to side of the leg.

This lint is placed in the large basin, and hot water poured upon it, so as to saturate it completely, and whilst dripping, and without being wrung, it is lifted out and put upon the outer side of the limb of the patient who is lying with the leg bent, and exactly in the same position as recommended by Pott, with this difference that the limb is on the inner instead of its outer side, by this measure insuring subsequent inversion instead of eversion of the foot—(*Vide* Fig. 1.) Extension and counter-extension are now

Fig. 1.

made by the hands of two assistants, and the fracture set by the surgeon, who models the wet lint on to the limb with his hands, so that it is as closely applied as a stocking would be; any starting or spasm of the muscles is prevented by the assistants just laying their hands steadily upon the limb. The surgeon now breaks the eggs upon the sharp edge of the small basin, drops the yolks into it, and the albumen into the other, having first thrown out the hot water which was previously in it for wetting the lint; he then takes sufficient flour, according to the size of the eggs, and with the spoon beats it and the albumen into a homogeneous mass of the consistence of pancake. He next measures with the end of a roller

the length of the limb, from the knee to the centre of the sole, and placing the forefinger of his left hand, pointing upwards, and the forefinger of an assistant opposite to him at the required distance, he winds the whole of the three roller bandages, one after the other, around the fingers, and then with a scissors divides them at either end; thus in a few moments obtaining the strips necessary for the splint, all of exactly the same and the proper length. Each of these tails is now spread thickly with the egg and flour upon one side, and as spread, folded double, with the plastered surfaces opposed and laid aside. The object of this is to keep them moist, and in hot weather from drying; as soon as they are all done the surgeon commences, and having them handed to him one by one, he lays them on the limb, moulding them to it, layer after layer, from the innermost portion of the tibia within to the farthest point of the calf of the leg that can be reached behind, covering accurately the instep, the toes, sole, and heel, and not leaving a wrinkle or crease. The large knife which has previously been employed for spreading the bandages with egg and flour, is now employed as a spatula, and taking a few of the tails of bandages which have been left unspread, these are passed beneath the limb, and one after the other brought around it (as shown by the dotted lines), so as to confine the wet tails to the leg, and not allow them to be raised from off it as they otherwise would be by the expansion of the heated air which becomes rarefied within.

The limb is now *left uncovered* till next day; if covered the splint will not dry, but retains a kind of pasty condition, whilst if exposed to the air for twenty-four hours it will be as firm and as light as cardboard on the limb. Upon the succeeding day the patient turns over upon his opposite hip, and the same proceeding is repeated exactly as before, taking care that the lint lining goes well over the limb, so as to be in advance everywhere of the plastered strips, which if allowed to come in contact with the other portion of the splint would intimately adhere to it, and cause difficulty in the separation of the halves; this too is allowed to dry. Upon the succeeding morning the two half splints, or only the second half, as the surgeon may think fit, are removed, the edges trimmed neatly with scissors, the second half overlapping the other by at least half-an-inch, ensuring correctness, whilst all pinching of the integument is prevented; when the roller bandage is subsequently put on, the two portions of the splint, in fact, should glide, as it were, the one over the other. Nothing more remains to be done; a couple of fillets to confine them to the limb, or a lightly applied roller bandage are

sufficient, and the patient may now lie in bed with his leg straight or bent, as he wishes, raised up upon a pillow, or slung, whichever way he fancies or feels it easiest; and after a few days may get up, supporting the extremity by a sling round his neck.

Subsequently, when the patients come to exercise and move about, and the size of the limb to decrease, the splints may be brushed over inside with hot paste (as also around the edges), and a piece of chamois leather, previously cut to the size and shape, moulded in to form a softer and additional lining.

These splints are very very light, weighing, when dry, but a few ounces, yet from their extreme accuracy in fitting the limb, and evenness of pressure, most surprisingly strong.

The same material I also employ in the immediate treatment of fracture of the fibula, and, at a later period, in fracture of the thigh, used in the circular form; put on, however, in tails, imbricated one over the other, and not as a roller bandage. Thus applied it is, of course, necessary to slit it up prior to removal, and for this purpose I employ a blunt gorget with the handle reversed, using it as an ordinary director, and cutting down upon the grooved steel with any sharp pointed knife. Seutin's pliers and all other kinds of scissors and dividers I have tried and found objectionable in use, causing more or less annoyance and pain to the patient from the pressure exercised upon the soft parts in making the division of the harder external case, whereas the gorget slips along upon the skin, whilst its broad, round, and polished surface, is cut down upon without the slightest motion or pressure, and is not noticed hardly by the individual; a sketch of the instrument in question is appended. (*Vide* Fig. 2.)

Fig. 2.
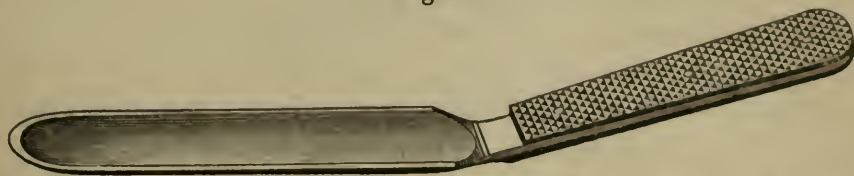
Such is the mode which I myself now employ, and such the form of proceeding in reference to fixed apparatus that I think will, upon experience, be found to be the most satisfactory to the practising surgeon; but, as so many other modes of putting up fractures in starch, gum and chalk, gum, &c., &c., have been referred to in the table of hospital practice here given, I would add a few words in reference to each, and my experience as to the advantages and disadvantage of the several plans.

The condition of one individual with a fracture of the leg, put up in a properly fitting and well applied fixed apparatus is so incomparably superior to that of another with a similar fracture, treated in any other kind of splint, that whatever can tend to the removal of objections, needs, I feel assured, no apology. The sufferer with fracture of both bones of the leg, set in tin, wooden, or other ordinary splints, is, for a considerable time after the receipt of the injury, dependent, and unable to do anything for himself; the other is comparatively independent; and fractures treated in the way described, of the tibia only, of the fibula only, and both bones together, have turned out so satisfactory that I cannot but speak strongly in its favour. The union has been firmer, in the same number of weeks, than under any other plan. Why it should be so is evident from two reasons—firstly, the mobility of the fractured ends of the bone is reduced to nil, and the circulation of the limb is normally maintained—no circular constriction existing to produce venous engorgement, and interfere with arterial supply. The egg and flour splint, made as described, has this great advantage also, that whilst being considerably firmer and lighter than the starch or other material, as ordinarily applied, it requires no padding for the protection of osseous prominences and projections. In the common mode of applying a starch bandage every point must be well protected by tow or cotton, or some other soft defence, and the heel, tendo Achillis, or instep, the metatarsal bone of the little toe and the ball of the great, the spine of the tibia, its tuberosity, the head of the fibula, the patella, and condyles of the femur, all require padding to prevent ulceration, whilst the longitudinal splint receives its own indentations so accurately as to press unduly on no spot, and retains its position *in situ* so completely as to maintain its exact position when once applied, thus obviating or rather preventing the restlessness which accrues from pain caused by the pressure of a splint upon a projecting point of bone, and which so often irritates the patient and causes him to undo and loosen the fracture for the purpose of obtaining relief. Its stiffness upon drying, too, is such as to obviate the necessity of resorting to any supplemental support from pasteboard, gutta percha, whalebone, or any other of the stiffening matters usually employed as adjuncts to starch, and which all, more or less, press upon the limb. White of egg and flour, therefore, used as directed, are the substances that, in combination, seem to be most desirable in practice—they are everywhere obtainable, and at a very trifling cost.

Gum and chalk are the next best materials—indeed, as for stiffening purposes, they will equally answer as the former. They are daily becoming more and more used, and have superseded starch in very many places; whereas, in no instance have I found starch to have replaced gum and chalk, when once introduced.

The general mode of using this combination is to rub up equal parts of powdered gum Arabic and prepared chalk, or one part of gum to two of chalk,[a] with cold water, to the consistence of thick cream, or white paint, at the time of use, and at the setting of the fracture; whilst others keep the mucilage of gum Arabic ready made, and when wanted pour it upon finely powdered prepared chalk, and rub it up to the consistence desired. The general directions given for its employment I subjoin, and the special plans apopted at some of the hospitals also annex.

GUM AND CHALK.

Mode of applying.—The mixture should be made of equal parts of prepared chalk and gum Arabic in powder, rubbed up together, with sufficient water to make it as thick as good cream, for unless made tolerably thick it will not answer well.

The limb is now to be evenly surrounded with wadding, or cotton wool, and then firmly bandaged with an ordinary roller from the toes to the knee. This bandage is then to be well smeared over with the mixture, and next a bandage, well soaked in the mixture and then rolled, is to be applied; this is again smeared over with the gum and chalk, and the whole left open to dry.

If it is desired to make the casing more than usually strong, another dry bandage is put over the last, which at every turn is smeared over with the mixture; when dry the bandage ought to look quite smooth and white.

This bandage looks better and keeps cleaner than if a simple dry bandage is placed externally. The bandages should be applied very evenly.

In saturating the bandage with gum and chalk, it is a good plan not only to soak the roller bandage in the mixture, but also to brush it into the bandage as it is rerolled, with a stiff shaving brush.

By immersion of the limb in warm water the whole can be removed if desired.

[a] The latter I consider the best.

The following are the plans adopted in the undermentioned hospitals, viz.:—

Birmingham.—Equal parts of gum and chalk rubbed down into water, to a proper consistence.

Leicester.—A simple roller is first applied, then strips of stiff brown paper, about two inches wide, smeared with a solution of gum and chalk in equal parts, made to sufficient consistence, placed both longitudinally and circularly over the fractured parts, and outside these a roller bandage saturated with the same.

This bandage is used at once in recent simple fractures of one or both bones, if transverse, but not if oblique.

West Liverpool.—Put on a dry roller, then mould pasteboard side splints; a dry bandage is placed over these to fashion them to the limb. The gum and chalk (of the consistence of thick cream), is then well rubbed into the bandage with the hand, and allowed to dry.

If extra firmness be required, another bandage is applied over this, and treated in the same manner, the heel being covered with the bandage, as it prevents all complaints of soreness and existence of swelling.

Middlesex.—Cover the limb with a thick layer of cotton wool; over this a simple bandage, next a mixture of gum and chalk, with a few strips of bandage extra, smeared in the mixture, placed over the seat of fracture.

STARCH.

Starch is, of all the materials used for fixed apparatus, that most commonly employed; but only so, I consider, from the two previously-mentioned not having been tried. It is, in my opinion, far inferior to either gum and chalk, or white of egg and flour; but, as being in such general use, I append it with the modes of application in several institutions.

Aberdeen.—Soak a roller in boiled starch the thickness of common mucilage; apply it from the extremity up to prevent swelling, in the same manner as any ordinary bandage—two or three layers; next apply two softened pasteboard splints, one on each side, confined by a dry roller; these splints are to be kept on for a few days, then removed, and the fracture left in the starch only.

Birkenhead.—A common roller is first applied to the limb, then five or six pieces of pasteboard, from six to nine inches long, and one inch and a half in length, soaked in hot water, are to be accurately moulded to the limb, around the fractured part; a thin

layer of cotton wool, or a piece of lint, being placed under the ends of the pasteboard to prevent any undue pressure and possible ulceration of the skin.

Over these strips of pasteboard a wet roller is placed, formed of cheese cloth or open canvas, its porous nature absorbing more readily, and in greater quantity, the starch, which is gently rubbed into its pores, the starch being as hot as the hand can bear it, and as stiff as it can be well used.

Canterbury.—Apply the starch bandage in strips, enclosing the heel; then a common roller, and again starch; thus bandage, and leave it to dry.

Chester.—Well soak a bandage in thick starch; then roll up for use; apply the pasteboard splints one on either side, and bandage over all.

Dorset.—A bandage is unrolled and wetted, then soaked in warm starch, and applied as an ordinary roller.

Essex.—Pad the bony prominences with raw cotton; apply a common dry roller; next softened pasteboard splints on either side, and over all a well-starched roller bandage.

Glasgow.—Wrap the limb in a layer of cotton wadding, or a dry roller; then draw a bandage through starch, so as to saturate it; apply this as a roller over pasteboard side splints, and a dry roller over all.

Hereford.—Bandage the limb and foot to above the knee; smear over with starch; pad the projections of the knee, tibia, and ankle, with tow; three wide strips of pasteboard, well softened in hot water, are to be applied; the posterier passing over the heel and terminating in the sole of the foot; the whole is then firmly bandaged and starched, a second layer being applied if necessary.

Portsmouth.—The bandage should be only two inches wide, making no reverse turns.

St. Bartholomew's.—First apply a flannel bandage to the leg; next a dry calico roller, and then lay on the starch with a brush.

Staffordshire.—First put on a bandage wet; then rub this over with starch; next a calico roller soaked in starch; rub this well with starch on the surface, and leave to dry.

University College.—Apply a roller evenly as far as the knee; next two splints of coarse strong pasteboard, and shaped to the foot and leg, so as to grasp it, with their edges carefully bevelled— these having been first well soaked in hot water. Starch of medium consistence is rubbed on the outer side of these splints, which are

then moulded to the limb by the hands of an assistant. Whilst the bandage is being applied starch is well rubbed into each turn of the roller, and afterwards plenty of starch is rubbed into the whole case.

If much strength is required a second bandage is similarly applied; when quite dry the case is cut open along the line of junction of the side splints, and, if necessary, the edges are pared, and then firmly brought together by a dry roller.

The bandage next the skin is dispensed with by Mr. Erichsen, who substitutes a small layer of cotton wool, so that there is less risk of strangulation taking place; and it also allows a fracture to be put up earlier than it otherwise could be done.

The objection to it is, that in very oblique fractures there is less certainty of obtaining an accurate coaptation of the parts.

Westminster.—Roll a bandage through a moderately thick solution of hot starch; let it stand an hour; then apply it to the leg; next smear a thick solution of starch evenly over, and allow it to dry. If not stiff enough to satisfy, another bandage is to be similarly placed over it when *quite dry*, but not before.

Chichester.—A dry roller; several splints of stout mill-board, softened in boiling water; then a bandage, thoroughly starched; and over this a dry roller.

Northampton.—First encase the limb in a thick layer of cotton; next a gutta percha splint, softened in boiling water, is to be moulded upon each side; a roller bandage is then to be put on in the ordinary way, rubbing starch in between each fold, made as thick as possible, and over the surface, so as to permeate it thoroughly.

PLASTER OF PARIS.

Plaster of Paris comes after gum and chalk in frequency of use. It is firm, and sets quickly; but is not so easily removed from the limb, and is very liable to crack. In using it the calico or other material employed for the bandage should be of very open texture, so that the plaster can be well worked into the meshes of the stuff, and not merely lie applied to its surface. It may be rubbed dry into the bandage, which is then rolled up, and wetted as it is applied to the limb; or the whole bandage be dipped entire into cold water, saturated, and then put on. Other surgeons use it thus:—They make a mixture, with cold water, of finely powdered good, dry, and *fresh* plaster of Paris, to the thickness of cream, in a basin; then unroll the bandage from a basin of cold water into the

basin in which the plaster of Paris is contained; roll the bandage again in the solution of plaster of Paris, and apply it quickly to the limb. The names of some of the hospitals who adopt it, and the modes which they adopt, are subjoined.

Devon and Exeter.—First put a single dry roller bandage on the leg, and then another bandage previously rolled into the dry finely powdered plaster, well rubbed into it, and soaked in water for a short time before being applied; after being put on a moderate coating of wet plaster is to be smeared over all.

Lincoln.—The bandage, with the plaster well rubbed into its meshes, is to be applied to the limb dry, and then wetted through, more dry plaster being rubbed on the bandage, and more water; then a tolerably thick layer of plaster is to be put on, and allowed to dry.

Liverpool.—Dr. Armstrong, of the Northern Hospital, Liverpool, puts up oblique fractures of the tibia at once, as follows:—A competent assistant holding the limb in accurate position, the surgeon takes a piece of muslin long enough to reach from above the knee behind, round the heel to the toes; and broad enough to enclose the limb, with the exception of an inch-and-a-half over the line of the tibia.

Having first tested the plaster to see how long it is setting (and if longer than five minutes, hot water, or a little salt, must be added), mix a good quantity of plaster, rather thin; soak the muslin in it, and apply it accurately to the limb, coating it well with the plaster of Paris behind and all over.

The assistant must hold the limb until the plaster sets. In this splint there is vent for any swelling; and, as the plaster is as firm as stone, no change of position can take place.

Compound fracture, when the wound is in front, can also be treated in this way; its cheapness is also a recommendation.

South Devon.—The dry powder is firmly and carefully rubbed into a roller of proper texture, with open pores, and of sufficient length; this is then accurately applied to the limb, each turn of the bandage being damped by cold water; and, subsequently, a layer of the powder is sprinkled over all and moistened.

Taunton.—Mix the plaster in a basin, and pass the bandage through it; apply the roller, rubbing more plaster into the pores of the bandage.

Gum and dextrine are but scantily employed, as compared with the substances already spoken of. Glue, too, is occasionally used.

Gum seems to be generally rejected in consequence of the number of coatings necessary to give to the splint the required consistence. Dextrine, because of its being difficult to procure, and more expensive than the others; and glue from its being less clean in its application. The hospitals in which the latter is occasionally employed are St. Vincent's and Dr. Steevens' in Dublin, and by Dr. Pentland in the Infirmary at Drogheda. Gum, when resorted to, is thus directed to be used.

GUM.

Bedford.—Envelop the limb in a layer of lint; then bandage firmly; next apply a thick solution of gum Arabic; allow it to dry, and then put on a second and third coat of gum solution.

Reading.—Place a layer of cotton wool round the ankle; then apply a washed bandage from the foot to the knee, and coat with gum; then take some pieces of lint, about two inches broad, doubled three times; gum them well, and place them on each side of the leg for two-thirds of its length; then put on another bandage from the foot to the knee, and gum it well and leave it to dry; the gum will have to be so applied about three times before it is hard enough.

St. George's.—A dry roller is first applied; then pasteboard splints; and, lastly, a gum bandage outside all.

St. Thomas's.—Three or four strips of lint, about an inch and a half broad, are dipped in thick mucilage of gum, and applied longitudinally along the leg; over this a wet roller bandage is placed, and at each turn a little mucilage is rubbed in; over the lint a second bandage is placed to give sufficient strength.

DEXTRINE.

Charing Cross.—Put a roller bandage on the leg; then, with a brush, plaster on hot dextrine, only liquid enough to soak through the calico.

To sum up; the principal points in connexion with the treatment of a recent fracture by the fixed apparatus may be set down as these:—

1st. To adopt longitudinal strips instead of a circular bandage.

2nd. To make the splints in two portions, excepting in cases of fracture of a single bone.

3rd. If making the splint in one piece, to do so by imbricating

the bandage in tails, and not using it in the roller form, as the turns in doing so cannot but more or less constrict the limb; besides, grating of the fractured ends of the bones cannot be avoided in the rolling up of the limb.

4th. In no case should the circular form of fixed bandage be adopted when the surgeon cannot inspect the limb within a few hours of its application.

5th. If constriction follow, and the limb requires to be freed, the splint should be slit up upon a broad director, such as a paper-knife, if better be not at hand, cutting down upon it with the point of a sharp penknife or bistoury.

6th. Never to use scissors or pliers when the last-mentioned mode can be adopted; and if any idea of using scissors be entertained then to employ the longitudinal tape recommended by Séutin when forming the splint.

7th. To use gum and chalk of the consistence of thick paint, or flour and white of egg of the firmness nearly of pancake, in preference to starch or gum, as drying more rapidly and being lighter, and not needing pasteboard or other additional support.

8th. If starch should be employed, to use it hot and as stiff as it can be worked.

9th. To pad well all bony projections when starch is used.

10th. To *tear* the pasteboard employed as side splints so as to bevel the edges, and not cut the splints out with a knife, in order to prevent the risk of ulceration, as laid down by Gamgee.

11th. To select pasteboard of thick and porous kind, which will readily absorb the starch and water, and be easily moulded to the limb.

12th. If the pasteboard at hand be too thin, then to use two or three layers, smearing each of them, and applying them together in two or three thicknesses.

13th. To use open-textured material for the bandages, more especially when plaster of Paris is employed.

14th. To see that the plaster of Paris is fresh, finely-powdered, and dry, and if so, to employ cold water in its mixing; but, if the plaster is not fresh, then to use tepid or warm water.

15th. To steady the limb with side splints if necessary, or sand bags, for the first few hours after the fracture is set, or until the first half of the splint (if made in two portions) is dry.

16th. If an opening for the dressing of a wound (as in compound fracture, or ulcer in disease of the joints, or for the application of

leeches), be required, then to form it in the method recommended by
Dr. Browne, of Galway, or the next mentioned, and not in the
ordinary way of roughly cutting the portion out.

" Dr. Browne's plan" is as follows, viz. :—To place a piece of the
thinnest zinc, the exact size of the opening intended to be made,
over the site of the wound, or required surface, and over this to
form the splint.   When dry and hard to cut down upon the centre
of this piece of zinc with a sharp knife; and then, having come
down upon it, to cut cautiously with a pair of scissors round and
round, until the piece of zinc, which has acted as a shield to the
soft parts, is set free.   The next plan, or that adopted by myself, is
to leave the opening in the formation of the splint thus:—After
encasing the limb or joint with lint, to trace out, with the point of
a pen and ink, a circle larger than the opening required; then, as
each layer of bandage comes over this spot, to cut out with sharp
scissors the requisite portion, and lay the cut edge nicely down to
the margin of the space needed to be open; to continue to do this
until the splint is completed, leaving the aperture with the lint
lining at the bottom.

This lint is now to be pinched up *in the centre* with a pair of
dissecting forceps, and punctured like a hernial layer.   The
point of the scissors is then to be entered here, and the lint divided
from the centre to the circumference, in a crucial form, reflecting
the four angular flaps, which are then turned to the back, and
fastened, with a little of the material used in forming the splint, to
the margin of the aperture or foramen.

The opening made in this way is more evenly bevelled at its
edges, and there is no secondary disturbance of the limb; but Dr.
Browne's plan has proved most successful in his own hands, and I
have to thank Dr. Browne for the suggestion, which may prove
useful to the readers of this paper.

ART. VI.—*On the Loss of Language in Cerebral Disease.*   By
    J. T. BANKS, M.D. Trin. Col. Dub., King's Professor of the
    Practice of Medicine, &c., &c.

THE influence of brain disease in the production of morbid pheno-
mena of speech, and of memory of words, has attracted attention
from an early period; but, of late, it has assumed an importance
and an interest far greater than formerly appertained to it.   This

is mainly traceable to the efforts which have been made in latter years, based on pathological research, to fix with accuracy the part of the brain which presides over language.

Before referring to the cases which have come under my own observation, one of which is replete with interest, I propose to glance at the contributions, chiefly of recent date, and derived, in a great measure, from the investigations of our continental brethren, and thus give a *resumé* of the present state of our knowledge of the subject. In the first place it will be necessary to call attention to the fact, that this morbid condition of speech, or rather, more correctly speaking, this symptom of cerebral disease which has been recognized of old, has lately received a new name or rather names, and it must be admitted that highly distinguished cultivators of medical science have assisted at the " baptismal rite." The term alalia has been long in use, though it is now generally attributed to Professor Lordat, and supposed to have been invented by him in 1841; but, as M. Jaccoud truly obsevres, it is only necessary to refer to Sauvages, Swediaur, Cullen, and Frank, to discover the precise and rigorous meaning of the word. They distinguished between the abolition of voice (aphonia), and the abolition of speech (alalia). Some ancient writers, however, following the example of Hippocrates, confounded aphonia and alalia.

In the year 1861, M. Broca proposed a new designation, and he calls the loss, impairment, or perversion of speech—aphemie. The venerable age of the term alalia has not been respected, so it was displaced by aphemia, which seems as if it were doomed to share the same fate, and to give way to aphesia, the word now adopted by Professor Trousseau, on the recommendation of M. Chrysaphis, a Greek by birth, and an eminent scholar. We now meet these three words " alalie," " aphemie," and " aphasie," used indifferently by French writers. To these may be added a fourth—" amnesie verbale." Of one form of aphasia we have an accurate description by Van Swieten, in his chapter on apoplexia:—" Vidi plures, qui ab apoplexiâ curati omnibus functionibus cerebri recte valebant, nisi quod deesset, hoc unicum, quod non possent vera rebus designandis vocabula invenire." The first writer in this country who specially directed attention to disordered faculty of speech in cerebral disease was Crichton, and since his time the observations on the subject have been numerous and valuable. My lamented friend and colleague, Professor Osborne, has contributed a most important memoir on this subject, with carefully recorded cases, in

the *Dublin Journal*, November, 1833; Dr. Graves also, in the *Dublin Quarterly Journal*, has given examples of forgetfulness of words in connexion with paralysis. The most recent writer on this subject is Dr. Forbes Winslow; and in his admirable work on *Obscure Diseases of the Brain* are many cases presenting morbid phenomena of speech, some of which have come under the immediate observation of this accurate observer, and others are derived from various sources.

The most ancient work specially devoted to this subject, the amnesia of words, is that of Gesner. Subsequently, as we shall see, continental physicians have enriched science with much information upon this obscure, but most interesting phenomenon; but chiefly since the publication of Professor Bouillaud's Memoir, in 1837, in which he localizes the faculty of language in the anterior lobes of the brain. Dr. Jules Falaret has lately published, in the *Archives Generales de Medecine*, in the form of a "Revue Critique," a vast amount of well arranged and valuable information on this subject, which proves that the learned author has devoted much labour to the investigation of reports and cases published not merely in his own country, but in Great Britain and Ireland.

M. Falaret well observes, that from the collection and comparison of facts, conclusions may be drawn as to the value of disturbance of language and memory in the diagnosis and prognosis of cerebral affections. There is no symptom of brain disease which presents itself in such varied forms as that which is under consideration, exhibiting every shade of difference, from the slightest deviation from the normal condition of speech and memory to complete mutism and utter forgetfulness.

M. Falaret proposes to arrange all cases presenting this symptom of cerebral disease in three categories. In the first are placed all those which, retaining intelligence and perfect phonation, can only remember or articulate spontaneously certain words, certain combinations of words, or even certain syllables or letters, but who can repeat and write all words. In the second category we find persons who can only pronounce certain words or syllables, and are unable to repeat other words, even when brought before them, although they retain the power of writing; again, others who cannot write although they can pronounce.

The third class contains cases less frequently met with, in which only some words or syllables are retained which serve to express every thought; the power of writing and repeating other words

being abolished. M. Falaret admits that this classification is artificial, and does not probably contain all the varied examples which we may meet in practice Dr. Jaccoud, in his memoir, *De l'Alalie et de ses Diverses Formes*, after an anatomical and physiological analysis of the act of speech, proposes to consider alalia under five forms:—The first is due to paralysis of the tongue (the glossoplegia masticularia of Romberg). The second is caused by absence of co-ordination in the centre of motive power (articulating glossoplegia). The third by interruption of voluntary transmission. The fourth is due to amnesia of words. The fifth is the consequence of sluggishness. A case recorded by Crichton is interesting from its being one of the first, and being very characteristic; it belongs to the first category of Falaret. It appears that the subject of it, an old man of seventy, having married a young wife, devoted himself with youthful ardour to his matrimonial duties. He soon manifested symptoms of mental debility, forgetfulness, giddiness, and insensibility to the affairs of life. It was observed that he misplaced words; wishing to ask for bread he asked for his boots. He was conscious of his mistake, for if the correct word was employed by another, he immediately took it up. The old gentleman, it is said, was cured by the administration of valerian; and, it may be assumed, by repose, which, in all probability, was more efficacious.

Crichton relates other striking examples in which proper names were forgotten, and even of individuals who were oblivious of their own. One is of an ambassador at St. Petersburgh, who, calling at a house where he was unknown to the domestics was unable to tell his own name. Dr. Graves reports a case, in the *Dublin Quarterly Journal*, of a man who, after an attack of paralysis, was unable to remember substantives and proper names. A lady who died of cancer of the brain, which occupied a great extent of the anterior left lobe in the early period of her disease, forgot the names of the most familiar objects. If the word was repeated before her she recognized it and repeated it. This case is related by Dr. Thomas Hun, of Albany.

The existence of aphasia is, in some instances, of most grave import; and in others it passes away without leaving a trace behind. Dr. Forbes Winslow mentions instances of persons misplacing words, and calling their children by wrong names, and even reversing the sexes, who were subsequently seized with apoplexy. Turning to von Swieten we find him under the head of " Memoria

Vacillans," make the like observation:—"Videmus sœpe in viris literatis, ingruente jam senio, illas eclipses quasi memoriæ, certa ferê semper apoplexiæ secuturæ præsagia." Examples are by no means rare, which prove that the cerebral state capable of producing lesion of speech, must be of a fugitive nature. Leichtenstein gives the following case:—A miller, aged sixty, was suddenly deprived of the power of speech, his intelligence and memory being intact, and retaining consciousness of his infirmity. He understood all that was said to him; two words alone remained, and these he frequently used to express his chagrin, fully comprehending their import— they were "Ach Gott." This man completely recovered in five weeks.

The following case, reported by Professor Trousseau, is worthy of attention, from its great practical value, and from the circumstance of the subject of it being an eminent member of our own profession:—

M. X., was confined to bed in consequence of an accident to one of his legs. He had read all day, and thus had fatigued his brain. While engaged in the perusal of a volume of M. de Lamartine's works, he suddenly perceived that he did not comprehend well what he was reading; he stopped, and essayed again; but with the like result. In great alarm he endeavoured to call out; to his horror, he found it impossible. It then occurred to him that he had been seized with apoplexy, and he commenced to perform the most complex movements of his arms, and of the uninjured leg, and satisfied himself at least that he was not paralyzed. Being alone, he rang his bell; but on the arrival of an attendant he could not articulate a word; he moved his tongue in every direction; and he was perfectly aware of the want of agreement which existed between the facility of movement of the vocal organs and the impossibility of communicating his thoughts by speech. He made a sign for writing materials; but he found he was as impotent to make known his thoughts by writing as by words. Having made cerebral disease the study of his life he analyzed the symptoms of his own case exactly as he would have done if at a consultation. At the expiration of two or three hours a physician arrived, and immediately he indicated, unmistakably, by pulling up the sleeve of his shirt and pointing to his arm, that he wished to be bled. Scarcely had the operation ended before he spoke a few words imperfectly; some of which expressed his meaning clearly, while others had no connexion with the ideas. At the end of twelve

hours he was perfectly himself again. It should be observed that M. X. had been diabetic for some years.

In connexion with the preceding case another may be referred to which presents some points of analogy.

M. Trousseau relates the history of a gentleman of sixty years of age, who, sitting at table, engaged in playing whist, perceived that he could not articulate a word. Up to that moment he had played with his accustomed skill. In a state of fright he returned home, even with more than his ordinary rapidity of walking. He wished to relate to his wife what had happened to him, and uttered some words of a sentence, omitting others which he could not remember At the end of two hours he was utterly unable to speak one word.

The physician who was summoned recommended the application of leeches to the anus; on the blood flowing freely, the power of speech returned, and he spoke with his usual facility. The patient was labouring under Bright's disease, which followed its usual course without any anomalous symptoms again presenting themselves.

M. Voget was consulted about a lady, aged fifty-eight, who had disease of the heart, and who was found gesticulating and constantly repeating " Vousi, vousi." In about two hours this lady recovered, and then stated that she intended to ask for ether, and to direct that a physician should be sent for, as she felt something strange and unusual.

Professor Trousseau records the case of a woman, aged fifty, who was admitted into the Hôtel Dieu. It was stated that a month previously she had severe pain in the head, followed by convulsive movements of the right side of the face. At this time there was slight embarrassment of speech. Two days before her admission she had a second epileptic attack, during which she bit her lip. She could only speak a few words, without any precise meaning. On being asked her name she said " Keller;" she repeated it, and wrote it with ease; but to every question she answered " Keller." She appeared to read during a great part of the day; but it was afterwards ascertained that her attendants were deceived, and that she was really unable to read, as she herself admitted on her recovery. M. Trousseau having found out that this woman had been the subject of a mercurial course on a former occasion—and, thinking it probable that the symptoms were due to a syphilitic lesion, seated in the left hemisphere, or at the base of the cranium—

treated her with iodide of potassium, the result of which was most satisfactory; the energetic employment of the anti-syphilitic agent being crowned with complete success.

A most remarkable and instructive case is reported by Dr. Forbes Winslow. A gentleman, after many premonitory warnings, fell down in a fit. It was a combination of apoplexy and epilepsy. For two days his life was in imminent danger; on partially recovering he could speak; but, without a key to its interpretation, it was impossible to understand what he meant, the words were so transposed and misplaced. What he said was written down, and the words placed in their proper order, and by this plan his family were able to comprehend his wishes. In consequence of occipital pain, and other symptoms of congestion, Dr. Winslow had this gentleman cupped, and in five days afterwards he was able to converse coherently for a few minutes; but if he prolonged the conversation beyond that time he again jumbled and misplaced his words. Minute doses of bi-chloride of mercury, in combination with tincture of cinchona, were subsequently administered, with great benefit. In a few months this gentleman entirely recovered, and has been for four years free from all symptoms of brain disease.

Dr. Winslow relates a strange misplacement of speech. A lady, deeply imbued with religious feelings, who, whenever she said the Lord's Prayer, instead of saying "Our Father, which art in Heaven," was obliged, by an irresistible impulse, to say "Our Father, which art in Hell." I was consulted, some time since, by a clergyman, who informed me that when he repeated the Lord's Prayer he felt himself constrained to say, after the words "Our Father, which art in Heaven"—"Let him stay there;" this was a source of great unhappiness to him. Professor Lordat, who was himself stricken with aphasia, has recorded the history of his sensation. He was capable of thought, but it was impossible for him to express it by words or writing. A man presented himself for admission at the Hôtel Dieu, but, being unable to tell his name, or give his address, and, understanding that he could not be admitted, returned home, followed by one of the hospital officials, and regained his abode by no easy route, thus showing that he retained the memory of places. M. Lasegue knew a musician labouring under complete aphasia, who could neither speak nor write in the ordinary way; but who, on hearing a passage of music, was able to write it with facility.

Before referring to the cases and facts upon which M. Broca has

founded his opinions with respect to the locality of the lesion of the brain which is, by him, believed to be the cause of aphasia, it may be well to briefly notice the views of former investigators who have made cerebral pathology an especial study. Since the theory was first promulgated by Gall, that the faculty of language is seated in the anterior lobes of the brain, many attempts have been made to establish it as a fact, on the firm basis of pathological research.

M. Bouillaud says:—" Les lobules anterieurs du cerveau sont les organes de la formation et de la memoire des mots, ou des principaux signes representatifs de nos idées."

M. Marc Dax having, for a long series of years, observed that every person who came under his notice affected with aphasia, and who was also paralyzed, presented the remarkable coincidence of having paralysis of the right side, consequently concluded that the cerebral lesion was in the left hemisphere of the brain; and he never found that when the right hemisphere was exclusively the seat of lesion this phenomenon was present. Following up the labours of his father, M. G. Dax has not only fixed the seat of cerebral lesion in aphasia in the left hemisphere, but he indicates the exact situation, viz., the anterior and external part of the middle lobe.

We now may advert to the very important observations of M. Broca. A man, aged fifty-one, first came under M. Broca's observation in the year 1861. He had worked at his trade (a last maker) notwithstanding that he was subject to attacks of epilepsy from his youth up to the age of thirty. At this period he lost the power of speech, when he was received into the Bicêtre. He could only reply to any question by the monosyllable " Tan;" and from this fact he received the name of Tan. In all respects, except the loss of articulate language, he seemed perfectly well. He was intelligent, and expressed his ideas by gestures. If he was not understood he uttered a great oath, which was the only addition to his eternal " Tan." Strange that an oath should sometimes be all that is left of speech. M. Duchenne (de Boulogne) related to Professor Trousseau the history of a lady, who one morning found herself deprived of speech, with the sole exception of " Sacrè nom de Dieu," and by the name of Madame S. n. de D. was she known to the town. The aphasia continued for many years, but it never interfered with her managing her affairs and her household with the same intelligence as formerly. To return to the case of Tan. At

the expiration of ten years from the time of the loss of speech the
right arm became weak, and gradually ended in complete paralysis.
Soon the leg was equally affected; and, after dragging the limb for
some time, he was obliged at length to take to bed altogether.

The amount of his intelligence could not be accurately deter-
mined; his hearing was acute, but his sight was enfeebled. It was
obvious he understood almost everything which was said to him;
but he could only manifest his wishes or his ideas by the movements
of the left hand. It is incontestable that this man was intelligent,
that he could reflect, and that he retained, to a certain extent, the
memory of events of an old date. The examination of the brain in
this case was conducted with great care. The details are given at
length, but it will suffice to state that the anticipations of M. Broca
as to the nature and extent of the chronic ramollissement of the
brain were fully confirmed. The point of departure of the extensive
softening of the brain, which was revealed at the autopsy, was, in
all probability, the third frontal convolution of the left hemisphere.
Here the greatest loss of substance was observed, for it was not
only divided on a line with the anterior extremity of the fissure of
Sylvius, but it had been destroyed to the amount of half its
substance.

The second case recorded by M. Broca is that of a man, aged
eighty-four, who was suddenly deprived of the faculty of speech;
he understood, however, all that was said to him, and made himself
understood by those about him. There was not the slightest sign
of paralysis of the limbs, or of the tongue. Deglutition was well
performed, hearing and sight were preserved, and the general
sensibility was unchanged. To questions he replied by signs, and
by a few syllables articulated abruptly and with an effort. His
vocabulary was limited to " Oui, non, tois (for trois), and toujours."
He had a fifth word, which he only pronounced when he was asked
his name: he answered Lelo, for Lelong, which was his real
name. The use he made of " Trois " was strange; the word was
always accompanied with a sign, made with his fingers; for, know-
ing that his tongue played him false, he rectified the involuntary
error by the gesture. When asked if he had children, he said
" Trois," and raised four fingers. How many boys? " Trois,"
and he raised two fingers. How many girls? " Trois," and he
again raised two fingers. What o'clock is it? " Trois," and
he raised ten fingers (it was ten o'clock). His gestures were very
expressive; and, by means of his few words in addition, he made

himself understood. He perfectly comprehended all that was said to him; and the conclusion arrived at, from attentive observation, was, that he was of sound mind. Twelve days before his death he had a fall, which fractured the neck of the thigh bone.

On examination of the brain a superficial lesion was observed, which occupied the left frontal lobe immediately beneath the anterior extremity of the fissure of Sylvius. At this point the surface of the hemisphere was sensibly depressed, and the transparent pia mater permitted a collection of serosity to be seen, which was about equal in size to a franc. The extent of the lesion was incomparably less than that which was found in the brain of the former patient; but, on comparison, it was found that the centre was identically the same in both cases. Notwithstanding the very limited extent of the lesion, the left hemisphere weighed considerably less than the right It appeared to M. Broca that the lesion of the left hemisphere was not a ramollissement; for in the immediate vicinity some spots were found of an orange yellow colour, which seemed to have a hematic origin. In point of fact, a microscopic examination proved the presence of crystals of hematine. The knowledge that the patient, eighteen months previously, had suddenly lost his speech in an apoplectic seizure, rendered it obvious that a clot had existed.

In these two cases (which are much abridged) we recognize many points of similitude. Each presented the phenomena of loss of speech and memory of words to a great extent, intelligence and power of making themselves understood being perfectly preserved. The organs of phonation were unaffected. From the observation of these two cases, M. Broca proposed to give a name to this so-called new disease; and he has denominated it "aphemie;" the essential characters of which, according to him, are complete or incomplete—loss of the power of speech, with conservation of intelligence, and integrity of the organs of phonation.

M. Falaret thinks, and with justice, that to these essential characters he should add that this disease is sometimes accompanied with some symptom of paralysis—above all, of hemiplegia; and, on the contrary, it is sometimes exempt from every paralytic phenomenon.

The locating of the faculty of language in the posterior part of the third frontal convolution of the left hemisphere is, according to M. Broca, the result of the analysis of the pathological changes discovered in the brains of these two persons.

The observation of a considerable number of cases after the promulgation of M. Broca's doctrine, strange to say, seemed to confirm its truth. One case alone threatened to shake the edifice, but it could not be said that it demolished it; for, though M. Trousseau adduced an example of aphasia, with paralysis of the left side, and consequently indicating disease of the right hemisphere, still, as there was no autopsy, it might be assumed as possible that, in addition to the cerebral condition capable of producing paralysis, there may have been also lesion of the left frontal convolution. The experience of M. Charcot, at the Salpêtrière, at first lent support to M. Broca's theory; but at length he found good reason to hesitate in adopting it as proved. He published a case in the *Gazette Hebdomadaire*, of which the salient points may be given.

A female, aged forty-seven, was seized with apoplexy, and, at the same time, she became paralytic and the subject of aphasia. Her speech was confined to a monosyllable, " ta," which she was in the habit of repeating distinctly and rapidly, and often four or five times (" ta, ta, ta, ta,"). Her intelligence was unimpaired, and the motions of her tongue were free in every direction. Eight months after the attack she died. The *autopsy* was performed in the presence of M. Broca. There was extensive ramollissement of the brain; but the third convolution (frontal left) was examined in every possible manner, even microscopically, without being able to discover the ardently wished for lesion. M. Vulpian has recorded a similar fact. Dr. Em. Farge (Professeur de Clinique Médicale a l'ecole d'Angers) has recently brought forward a case of hemiplegia (right), with aphasia, *without* lesion of the third frontal convolution of the left hemisphere. M. Farge observes:—" Nous croyons donc pouvoir conclure que ce fait est en contradiction avec le doctrine qui affirme d'une façon absolue la corrélation de l'aphasic et de la lesion de la troisieme circonvolution frontale gauche." M. Peto records a case observed by him, which proves that the two frontal lobes may be destroyed at their anterior extremity without abolition of the faculty of speech. Time does not admit of referring to the views of Schroeder van der Kolk as to the influence of the olivary bodies on speech, but it may be noticed that in most of his cases in which the olivary bodies were diseased there also existed atrophy, softening or malformation of the anterior cerebral lobes, the seat of speech, according to Bellhomme, Lallemand, Bouillaud, and many others.

Having now given an imperfect sketch of the present state of

knowledge on the subject of the phenomena of speech in connexion with cerebral disease, I shall direct attention to a case which I have lately had an opportunity of frequently seeing, in consultation with my friend, Dr. Kidd, of this city:—A gentleman, aged about seventy-five, of very strong frame, who had lived a temperate life, and generally enjoyed excellent health, began, some years since, to show signs of senile decay. Four years ago he had a slight apoplectic seizure, marked by unconsciousness and some degree of coma, which passed off without leaving after it any form of paralysis. The only remedial agents which were employed were cold applications to the head, and hot pediluvia.

About two years ago the anterior tibial artery of one leg was obstructed, and the great toe became shrivelled, painful, cold, and of a dusky hue. After some months he recovered perfectly, as if by the establishment of collateral circulation, the pulsation, however, not returning to the dorsal artery of the foot.

On the 28th of March, 1864 (a day unusually cold and severe), he walked, unaccompanied, to a dog show, which was held at the Rotundo, a considerable distance from his residence. He had breakfasted early, and spent the whole day on foot, and returned shortly before dinner hour. At the commencement of dinner he appeared in his usual state of health, but being cold he sat with his back to the fire. For some time he proceeded with his meal as usual; but it was observed that some of the water he was drinking flowed from his mouth, and he put down the glass, calling, at the same time, in a loud and excited voice, for his wife and the servant who was in the habit of attending him, notwithstanding that they were present. The patient was seen by Dr. Kidd in a very short time. He was then sitting on the sofa, looking puzzled, but evidently conscious, calling out loudly, at intervals, for the servant and others, but not taking the slightest notice of anything which was said to him. Dr. Kidd was satisfied that he recognized him. There was no heat of head, and his pulse was as usual. His feet were put in hot water and mustard, and, after a little time, a mustard sinapism was applied to the back of his neck. When the sinapism began to act he put his hand to it, and complained of its being "very toast." The excitement under which he laboured at first passed away, and, after a little time, he called for something; but failing to make himself understood he unbuttoned his dress, showing that he wanted to pass water: on getting the vessel he performed the important operation without difficulty. Before

retiring to bed, calomel, which had been administered to him, acted on the bowels. He walked up stairs unassisted, wound his watch, went to bed, and slept well. The following morning Dr. Kidd saw him, and he recognized him, but failed in naming him. It was now found that he was completely deaf, the loudest noises not being perceived by him. He could see perfectly, and there was no paralysis of any kind. In speaking, he used wrong words, so as to be utterly·unintelligible. He called for the " cup," meaning his wife; and he applied the word cup in the most diverse and extraordinary ways. He, however, asked his daughter for her " mother," yet he was quite unable to express any of his thoughts or wants. On my visiting this gentleman, with Dr. Kidd, he certainly recognized me, and was glad to see me, but misnamed me; saying something, but using words without meaning, in trying to name me. He looked from Dr. Kidd to me, as if he understood that it was a consultation, used the words " good friends," and we fancied he referred to our having seen him on former occasions. We endeavoured to communicate with him by writing, but it was evident that he did not understand it. " Have you pain?" was written, and he looked at it and said, " Good, good God ;" appearing to read what was written. One of his sons, who is a physician, visited him, and on seeing him he seemed to experience much gratification, and appeared to intimate that he was a medical man. At the beginning of April a remittance was due from his agent, and each morning he was much excited, asking frequently for something. At length it occurred to one of the family to show him the agent's letter, which seemed to please him; but he was not quite satisfied until the money was brought to him, and it was counted before him. Some shillings were not shown him at first, but when he saw them he appeared to know all was right, and then, on the money being handed to his wife, he appeared content. With respect to his feelings, it was noticed that his affection for his wife, which was very strong when he was in health, seemed, if possible, to be intensified; for he could not bear her to be out of his sight, and he frequently cried on seeing her. He attempted to write letters frequently, and the address was written twice or three times at the head of the sheet of paper, some of the words being imperfect. " My dear Sir," was written correctly, the sheet being filled; but no word except " wife" was legible—the rest being utterly meaningless; some letters were correctly formed, but no words until the end, where his name was signed in a steady hand, and in his usual manner. A few days

afterwards it was necessary to get him to sign a power of attorney, to enable his family to draw dividends, and much time was occupied in the morning getting him to sign his name on blank paper—but all in vain, for he only scribbled some unintelligible words; but later in the day, when the power of attorney was presented to him, he signed his name in the right place, opposite the seal, without the slightest hesitation.

It was impossible to get him to understand anything; and his meaning could only be guessed at by his gestures, and by the very few words at his command, which were almost always misapplied. He soon began to go about, to walk in the garden, and to drive; and his command over words seemed to be a little improved; but they were strangely misapplied—one word being sometimes used for the most diverse things. For some time "sheep" was the word; and everything he wanted was "sheep." He watched the post hour; and always asked if there were any sheep—meaning letters. His wife he called sheep, applying the word to almost everything. Wishing to inform Dr. Kidd that a liniment which he had been using was nearly finished, he said, pointing to the bottle—"Bring the cord." On another occasion, speaking of pills he had been taking, he said he had taken "potatoes." Very frequently there was some similarity in the word used to the right one; or it could be observed that there was some association with the idea he wished to convey; for example—giving his waistcoat to be put aside, the watch being in the pocket, he said—"Take care of the breakfall."

On directing attention to his side, probably the site of pain, he said—"Oh! there is a world here." He seemed conscious of his deafness, and sometimes spoke of it; one day he said he could neither hear nor read—"Only a little could read the words, but not take in the meaning." Every morning, notwithstanding, he spent some time as if busily employed reading the Bible and the newspapers. This was, doubtless, from the mere force of habit; for on testing him, even with the Bible, he read, as it were, but the words, unconnected and meaningless, had not even the most remote connexion with the text. Seeing the family going to church he was anxious to go; and his wife, being unwilling to bring him, remained at home. The following Sunday he was brought to church, as he had appeared so annoyed on the former Sunday at being prevented, and he seemed as attentive as usual.

Early in June he expected a certain payment, and insisted on

getting his bank book to see if it was entered in it. On examining the book, he was very angry, and much excited about it. All attempts to explain that the payment had been delayed proved unavailing; but, at length, another book was procured with the entry made in it, and he then was satisfied. His power of expressing himself and his use of words had somewhat improved; but his writing was as illegible as ever; with the exception of the address and the name at the end, all the rest was a mere scribble. Now he could occasionally read a sentence written down for him; but the next instant he failed altogether. On the 15th of June it was arranged that there should be a consultation, and Dr. Kidd wrote that I was coming; this he read. Dr. Kidd then wrote—" Have you any pain?" and he could not read it. He then wrote—" Have you got the phaeton?" He made an effort to read it, but merely muttered some words which had no reference to phaeton, which, for some days before, he had been talking of getting; and he had drawn a sketch of the kind he wished for, and had gone to the coach-makers to procure it. At this time our opinion was asked; and we were required to certify as to this gentleman's state, with respect to his power of managing his affairs. Although there was, to some extent, an amelioration of his symptoms, he was incapable of any sustained mental effort, and, as he could not hear or read so as to be communicated with, and as he could not convey his thoughts orally, or by writing, we came to the conclusion that he was, and had been, from the date of his attack, unable to manage his affairs or to transact any business.

Sudden and loud noises, as the clapping of a door, or a knock, seemed, at times, to attract his attention; but not at others. He frequently appeared to suffer pain, and sought sympathy; pointing to his shoulder, he said—" The world is in that root."

He took off his waistcoat, and, handing it to his wife, said—" Take care of that family," meaning his watch; but in general his words could not even be guessed at. He appeared to read; but the words had no resemblance to what was written for him, or what was in the book.

His state varied much, for at times he could both speak and write better than at other times. The first letter he wrote had but one legible word in the body of it. Annexed are two letters he wrote to his daughter, Sarah, when she was from home; the first written on the 8th of May, as it correctly states, on " Sunday, the day of her birth;" the second, written to the same daughter, is

My dear Darling Sarah

I wish to know you
if you wanted to Sarah
you to ask of he hand of
my Brother ask you of
you Sext on Delhe or you
Sester the Sunday day of you
Brother

14 May 1864

My darling Mother Willey

Bessy I now feel billy

I thought to get goods

for thee for a Doit &

hopes which hope be both

but few know I could do

nothing of but Xfeel

be young — my darling to you

my darling Willey John &

Willey I feel for a song of

a kiss you long with

you love Sarah —————

addressed very confusedly, and her name does not appear in it
For nearly four months (from the 15th of June to the 7th of
October), there was little change in this gentleman's state. Occa-
sionally it was difficult to manage him, as he frequently wished to
go somewhere; and when it was impossible to understand him he
became very much excited. On one occasion he came to my house,
and on seeing me he manifested pleasure by the expression of his
countenance; but I could not form the most remote guess at the
meaning of the very few words which he said.

On the 7th of October Dr. Kidd was summoned to see him; and
I saw him a few hours after, in consultation. Dr. Kidd found that
while sitting after dinner our patient had leaned his head against
his wife, and gradually became unconscious. When Dr. Kidd
arrived, which was in a few minutes, he found him in a state of
coma, and his breathing slightly stertorous. The right arm and
leg were rigid, and the muscles were occasionally thrown into
spasmodic action; but in a few hours the spasms ceased, the
muscles relaxed, and a state of complete hemiplegia was established.
Slowly he emerged from the unconscious condition, and he followed,
with his eyes, the movement of those about him. He retained per-
fect power of motion of the left side; and when his dress was being
changed tried to assist in arranging it. There was no paralysis of
the face. The respiration ceased to be stertorous in a few hours
after the seizure; but the following day it assumed a peculiar
character—at intervals it grew shorter and shorter, until it ceased
altogether; then, after an interval of a few seconds, he began to
breathe again.

On several occasions Dr. Kidd counted forty-three seconds
during the pause in the respiratory action.

For the first two days the breathing returned calmly after each
cessation; but afterwards with a start. In general, during the
intermission in the breathing, the pulse was scarcely affected; but
when the interval was unusually long it became smaller and
quicker. On applying the ear to the chest no sound of moving air
was audible during the intervals.

There was no sign of effusion into the bronchial tubes until
within a few hours of his death; and the peculiar breathing had
ceased for the last twenty hours of his life. On the 15th of Octo-
ber he died, having lived one week from the date of his attack.

It is worthy of observation, that, though the peculiar respiration
so closely resembled that form of breathing which we meet with

when the muscular tissue of the heart has undergone a process of degeneration, and has become greatly weakened, there was no other evidence which would tend to support the idea that this condition was present. The heart's impulse was not indicative of diminished power, and the sounds were normal; the pulse was strong and full, though there was an occasional intermission.

It is a subject of much regret to Dr. Kidd and myself, that it was found impossible to obtain permission to make a *post mortem* examination in this case.

There was one phenomenon which accompanied the perversion of speech in this gentleman, which, as far as I know, has not been observed in any of the recorded cases—I allude to the fact of his being stricken with absolute deafness contemporaneously with the aphasia. This is important in one respect, inasmuch as in this case it enabled us, without hesitation, to come to a conclusion which, in some instances, must be a matter of extreme difficulty, It was, beyond all doubt, that, although possessing a certain amount of intelligence, he was unable to manage his affairs or transact any business, inasmuch as neither orally, or by writing, could he communicate his ideas; nor could he, as many persons labouring under aphasia can, express, by signs or gestures, his approval or otherwise, of a communication made to him. In a medico-legal point of view it is of much consequence to consider the testamentary capacity of persons who have had attacks of apoplexy with aphasia, or even of those who, without either apoplexy or paralysis, are so affected as to render it a matter of difficulty to communicate their thoughts by words or by writing. So far as the latter is concerned, in the complicated cases, the right side being almost invariably paralysed, a difficulty is experienced.

That the intelligence is injured, or has received a shock, in many cases is quite certain; and this we learn, as Professor Trousseau points out, from the account given to him by the physician who was, when attacked, in the act of reading Lamartine; but the cloud was only a passing one. There are persons who, even when the imperfection of speech is an abiding state, are perfectly competent to manage their affairs and transact the ordinary business of life. I have long had under my observation a gentleman, now aged fifty-four, who, eight years since, was suddenly attacked with paralysis of the right side and loss of speech. At first the aphasia was complete: he could only utter " Nay, nay;" after twelve days he could say a few words. At the time he was first seen by me his

stock of words was of the most limited character, and he frequently misplaced them—yes for no generally. With extreme regret he informed me that his memory had quite failed him with respect to Greek and Latin. He was a ripe scholar, and had taken much pleasure in reading the best classical authors, and thus his knowledge of the dead languages had been fresh up to the moment of the seizure. For six years he continued, without, to any considerable extent, improving; but still he was gradually acquiring new words. He frequently, however, misplaced them, saying yes for no, and *vice versa*. For the last two years his progress has been comparatively rapid; and I have had an opportunity of investigating his present condition. He speaks now correctly, slowly, and deliberately, as if he was carefully selecting his words; somewhat as if he were conversing in a foreign language, the power of fluently speaking which he had not attained. He has laboured hard, and almost learned over again all that he had forgotten. The process, he says, was comparatively easy, and he now reads his old favourite classical authors once more. Horace he is at present engaged in reading, and he also reads Greek. To be certain that his memory was so good as he seemed to think it, I proposed to him lately, when he visited me, to translate a few lines of a Latin book, which happened to be on the table, and this he did correctly, but slowly. Not merely has he been in the habit of amusing himself with Greek and Latin, but he also devotes some time to algebra. The paralysis of the right side remained unchanged for a long period; but the power has returned to the leg, so that he can now walk without any drag or impediment; but the arm has not recovered in like manner. He has never regained the use of the right hand, so as to be able to write. He can move the arm perfectly well, but he finds it impossible to perform any operation requiring nice manipulation.

This case presents many points of interest, and is important as establishing the fact that the intelligence may be conserved, and remain uninfluenced by the cerebral lesion which has produced paralysis and aphasia. At the moment of the seizure, or for some short time, this gentleman's intelligence may have been obscured; but, when seen by me, notwithstanding that he misplaced words, and that he had not many at his disposal, he was conscious when he made a mistake, and when the right word was suggested he immediately adopted it. He made numerous mistakes in his attempts to read also.

Having had, for several months, opportunities of testing the mental condition of this person, I was satisfied that his intelligence was uninjured, and that his testamentary capacity might be maintained, in the event of such a question arising. This being a complicated case I adduce it to prove that, even in aphasia with paralysis, the mind may remain unclouded, and the power of speech, even after years, may be re-established. Doubtless, the prognosis in aphasia must be influenced by the nature of the attack and its associations. Cases have been referred to, in which the aphasia being uncomplicated, and probably due to congestion of the brain, yielded to the abstraction of blood, and in one, to anti-syphilitic treatment. Physicians who have had much experience in fever can readily recall to mind cases in which the intellect was feeble and the memory of words defective for some time after recovery. Aphasia has been observed by Trousseau after a severe case of enteric fever; and Professor Boucher, of Dijon, records two cases of aphasia following enteric fever, one in a young person of thirteen, and the other in a child of three years, and in both he found albumen in the urine. Touching the fact that imperfection of speech is too often looked upon as connected with irremedial cerebral disease, it is important to bear in mind that there are a sufficient number of recoveries recorded—some rapid, some slow—to prevent us from falling into this error, a mistake probably arising from the frequent connexion of imperfection of speech with general paralysis of the the insane.

There are other cases of loss or impairment of speech which I should like to detail, but this communication has already extended to too great a length. I shall only notice two, in conclusion:—I had some time since under my care, in the Whitworth, and also in Sir Patrick Dun's Hospital, a young female who had an attack of hemiplegia of the right side, and, at the same time, perfect aphasia. After several months, she acquired the power of uttering three words, which she never seemed to tire of repeating—" Ah, mother dear." I have lost sight of this young person; but when I last saw her, a very considerable time after she had got so far, I found that she had made no new acquisition. Mutism, connected with mental alienation, does not come within the scope of the present inquiry, but I may mention that I have, not long since, seen a gentleman who has not spoken for thirteen years.

Art. VII.—*On Supra-renal Melasma.* By Thomas Hayden, F.R.C.S.I., L.K. and Q.C.P.I., &c.; Physician to the Mater Misericordiæ Hospital.

The disease which bears the name of Dr. Addison, though repeatedly the subject of difference of opinion and warm controversy, has been steadily acquiring increased interest since the publication of his memoir in 1855.

This result is, in some measure, due to the hope entertained that the remarkable association of disorganized supra-renal bodies with pigmentation of the skin and mucous surfaces may furnish a clue to the ultimate discovery of the precise function of these organs, and of the other so-called blood glands; but is no doubt mainly to be attributed to the unusual group of symptoms which characterizes the disease; the absence of any intelligible and adequate cause to account for their gravity, such as pathologists are accustomed to meet with in investigating other diseases, and the total want of success which has hitherto attended the treatment of the affection.

The three salient features of the disease are—progressive debility, with or without, more frequently without, proportionate wasting; uncontrollable irritability of stomach; and a peculiar discolouration of the skin. In all the cases in which the blood has been examined it has been found to contain an excess of white corpuscles; to this extent, therefore, the disease is allied to leucocythemia, and in the blanched appearance of all the tissues and surfaces not actually discoloured, the languor of mind and body, and the general debility, it resembles simple anemia.

I have collected and tabulated all the reported cases of this disease within my reach, for the purpose of ascertaining—1. The proportion in which the sexes were respectively the subjects of it. 2. The age at which it most frequently occurs. 3. The duration of the fatal illness, and of the colouring of the skin respectively. 4. The proportion in which wasting, debility, irritability of stomach, and head symptoms prevailed. 5. The alteration, if any, in the constitution of the blood. 6. The relative proportion in which both supra-renal bodies, and only one, were found disorganized. 7. The character of the morbid deposit in the supra-renal bodies. 8. The relative proportion in which either capsule was more affected than the other. 9. The proportion of cases in which concomitant disease existed in other organs and tissues, and the nature of that disease; and 10. The extent to which, numerically, pigmentation of mucous and serous surfaces prevailed in the cases reported.

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Source	Male	Female	Age	Duration of Illness	Duration of Colouring	Wasting?	Debility?	Irritable stomach?	Headache?	Blood Examined?	One or Both Capsules?	Nature of Disease of Capsules?	Left More Engaged?	Right. More Engaged?	Disease of other Organ?	Mucous Surface Coloured?	Other Part Coloured?
Addison	1	—	32	3 years	3 years	1	1	1	1 and delirium	—	both	strumous	1	—	—	1 lips	—
	1	—	35	6 months	6 months	—	1	1	1 & unconscious occasionally	excess of white corpuscles	both	strumous	1	—	tubercle in lungs, caries of spine, and enlarged spleen	1 lips	—
	1	—	26	6 months	3 months	—	1	1	—	—	both	strumous	1	—	tuber. lungs, spleen enlar.	—	—
	1	—	22	several months	several months	1	1	1	1 and delirium	—	both	fibrous inflam.	1	—	tubercle in lungs	—	—
	1	—	45	12 months	12 months	partial	1	1	—	-	both	strumous	1	—	carcinoma of stomach	1 lips	peritoneum and mesentery
	1	—	53	3 months	3 months	1	1	1	—	—	left only	cancer	—	—	effusion on brain, fat of kidneys, tubercles of kidneys, spleen, and peritoneum	—	—
	1	—	58	2 months	5 days	—	1	1	—	—	one	strumous	not stated	—	—	—	—
	1	—	23	—	—	—	—	—	—	—	one	cancer	left only	—	cancer uteri	—	—
	1	—	—	—	—	—	—	—	—	—	one	cancer	left only	—	cancer of thorax	—	—
	1	—	59	11 months	11 months	1	1	1	delirium	—	both	degenerat. fibrin	—	—	fatty heart	—	—
	1	—	38	12 months	no discolour.	1	1	1	—	—	both	fibrous material, strumous deposit	—	—	tubercle lungs	—	—
Wilks	1	—	24	5 months	5 months	1	1	1	—	—	both	fibrinous	left	—	not examined	1 lips	—
	1	—	28	a few weeks	a few weeks	1	1	1	—	excess of whitecorp.	both	fibrin and struma	—	—	soft brain and inflam. of arachnoid	—	—
	1	—	35	a few months	a few months	1	1	1	—	—	both	fibrinous	—	—	tuber. in lungs, enlarged mesenteric glands	—	—
	1	—	32	3¼ years	3¼ years	—	—	1	—	—	both	albumino-cretaceous (strumous?)	doubtful	—	certified tubercle of one lung, gastritis, and enlarg. of aginnate glands	—	—
	1	—	25	8 weeks	discol. doubtful	—	—	1	delirium	—	both	larciaceous & amorph	left	—	—	—	—
	1	—	21	some months	some months	—	1	1	stupor	—	both prob.	albumino-creta.	left?	—	—	—	—
	1	1	26	12 months	8 months	—	1	1	headache and giddiness	—	both	strumous?	left?	—	enlarg. mesenteric glands	—	—
	1	—	15	7 months	6 months	—	1	1	—	—	both	strumous	—	—	—	—	—
	1	—	39	—	5 years	—	1	1	drowsiness, delirium, & convulsions	—	both	strumous	—	—	tubercle of right lung and caries of spine	1 lips	—
	1	—	13	4 months	2 months	not stated	1	1	—	—	both	strumous	—	—	—	1 lips	—
	1	—	23	13 months	13 months	—	1	1	—	—	both?	fb. album.(strum.?)	—	—	tubercle in both lungs, caries of spine	—	—
	1	—	20	4 months	4 months	—	1	1	drowsy	—	both	strumous	—	—	—	lips intest. m. menb.	—
	1	1	37	2 years	2 years	1	1	1	—	—	both	strumous?	—	—	solidif. of apex of right lung	lips peritoneum	peritoneum
	1	1	23	12 months	5 months	—	1	1	—	—	both	strumous?	—	—	—	—	—
	1	—	32	4 years	4 years	—	1	1	—	—	one (other absent?)	fib., album., and cretaceous	1	—	—	—	—
	1	—	46	6 months	2 years	1	1	1	—	—	both	strumous	1	—	—	—	—
	1	—	26	3 years	3 years	not stated	1	1	—	—	both	albumino-creta.	both equally involved	—	—	—	—
My Own Pathological Society, Lond. shown. Case. Haberson	1	—	19	4½ years	4½ years	—	1	1	1 and drowsy	—	both	fatty, cret.,&fibroid	1	—	enlarged spleen, adhesion of liver, spleen, and ovaries	1 gums	—
	1	—	18	23 months	23 months	—	1	1	—	—	both	strumous	1	—	tubercle of liver	1 lips	—
	1	—	33	5 months	5 months	not stated	1	not stated	not stated	—	both	strumous	1	—	tubercle of liver, congest. of spleen and l. glands peritonitis	—	—
	1	—	43	7 months	7 months	not stated	not stated	not stated	not stated	—	both	strumous	—	—	tubercle of lungs and caries of sternum	—	—
	1	—	81	not stated	12 months	not stated	not stated	not stated	convulsions	—	one	fatty	—	right only	congest. brain	—	—
	1	—	45	10 months	10 months	1	not stated	not stated	convulsions	—	one	strumous	not stated	not stated	—	1 lips	—
	1	—	11	not stated	6 months	1	—	1	—	—	both	albumino-creta.	both equally involved	involved	—	—	—
	1	—	16	—	6 months	1	1	1	1	—	both	strumous	1	—	tubercle of mesenteric glands	1 lips	—
Totals	26	11		—	—	11	29	28	13	9	28 cases 35	cases 34	cases 32	cases 36	24 cases 36	9 cases 37	3 cases 3

It appears from the preceding table that out of a total of 37 well authenticated cases 26 were males, or 70·27 per cent., and 11 females, or 29·73 per cent. Of the patients whose ages are reported the youngest was 11, and the oldest 81 years of age. Of the total of cases 6 were under 20 years; 10 between 20 and 30 years inclusive; 11 between 30 and 40 years; 4 between 40 and 50 years; 3 from 50 to 60 years; and only 1 over 60 years. Thus, of the total 37 cases, 21, or 56·75 per cent., occurred between the ages of 20 and 40 years.

It is not easy to fix the date of commencement of the specific illness which characterizes this disease, owing to its insidious character, and to the fact that patients, unless closely questioned, are prone to date their illness from the period of manifestation of the first prominent symptoms of their case. From the reports given it would appear that of 31 cases, the date of commencement of which has been fixed, 14 had been unwell for a period varying from 1 to 6 months before seeking medical advice; 9 from 6 to 12 months; 3 from 1 to 2 years; and 5 over 2 years. The longest period of antecedent illness was $4\frac{1}{2}$ years.

The table shows that out of 32 cases, in which the date of the first appearance of discolouration has been noted, it had manifested itself within 6 months anterior to the date of first seeking medical advice in 15 cases; from 6 to 12 months in 7 cases; from 1 to 2 years in 4 cases; and over 2 years in 6 cases. In 1 instance discolouration had been noted 5 years anterior to the date of medical report, but in that instance it does not appear whether the patient had been previously ill. In 1 case the patient had been discoloured 6 months, and in another 12 months, but in neither is the date of commencement of illness stated. Discolouration has existed 2 years in a case in which the date of first illness is doubtful; and "no discolouration," according to report, had at any time appeared in 1 case, in which the specific illness had existed for 12 months previously. With these exceptions discolouration was coeval with illness, or of later occurrence, in all the reported cases, that is in 26 out of 31, and of 20 of this number, in which illness had existed from 6 to 12 months previously, discolouration is reported to have occurred simultaneously with illness in 14; and in the remaining 6 cases from 1 to 7 months subsequently.

The mucous surfaces of the lips and gums were partially discoloured in 9 out of the 37 cases; the intestinal mucous membrane in 1; and the peritoneum in 2 cases.

G 2

That the change in the colour of the skin is due to excessive pigmentary deposit in the deeper layers of the cuticle has been repeatedly proved by microscopic examination; but the source whence this pigment is derived, and the determining cause of the excessive deposit of it in Addison's disease, are entirely unknown.

It is probable, from the following considerations, that the colouring matter of the fluids and solids of the body, in the state of health, is derived directly from the blood, and results from the solution of its red corpuscles. The experiments of Bidder and Schmidt on cats, dogs and foals, show that from two thirds to the entire quantity of the blood of a vertebrate animal is replaced or renewed from the lymph and chyle every 24 hours. The corpuscles of the displaced blood must undergo solution or liquefaction as a preliminary step to their expulsion from the body; and from all we know it is probable that they are dissolved in effecting the last stage of assimilation or elaboration of the nutritive materials of the tissues.

The liberated hematin, or colouring matter, is used to tint the several coloured tissues and secretions; in a somewhat modified form it re-appears in the bile, the urine, the synovia, &c., and in a scarcely altered condition it constitutes the pigment of the *rete mucosum*, and of the choroid and iris.

Professor Parks has noticed that in extreme cases of anemia, in which the red corpuscles are greatly in defect, the urine is devoid of its ordinary colouring matter, *uro-hematin.*

Hematin, in the purest state in which it is possible to obtain it from the blood, is dark brown in colour, insoluble in water, and not liable to alteration by exposure to gases.

The pigmentation of the skin in Addison's disease results, probably, either from arrest of the process of molecular disintegration of the coloured cells of the cuticle, or from excessive destruction of the red blood corpuscles, and consequent abnormal deposit of the escaped colouring matter, or pure hematin, in the *rete mucosum*, in its passage to the outer surface of the cuticle whence it is to be discharged from the body; the latter view is rendered more probable by the fact already noticed, viz., that in all the cases of supra-renal melasma, in which the blood has been examined, white corpuscles have been found in relative excess.

Wasting has occurred in 11 cases out of 34 in which the condition of the patient has been reported; that is, in the proportion of 32·353 per cent. It is not a little remarkable, that notwithstanding the inability of the stomach to retain food of any kind in most cases,

and in many during a period long antecedent to death, wasting should have occurred in so few instances. This apparent incongruity may possibly be explained by the activity of absorption, due to the spanemic state of the blood, and by the absence of organic disease of the stomach; it thus happens that of the nutriment taken and retained, even for a few seconds, a considerable portion finds entrance into the circulation.

Of 6 out of the 11 cases in which wasting *did* occur, 2 were complicated with tubercular deposit in both lungs, 1 with carcinoma of the stomach, 1 with enlargement, and another with tuberculosis of the mesenteric glands, and 1 with congestion of the brain, conditions in themselves amply sufficient, with the exception of the last, to account for marasmus. In 1 case the other organs of the body were not examined.

Debility occurred in 29 cases out of 34, in which the condition of the patient in regard to this symptom has been reported, *i.e.*, in 85·294 per cent. of the reported cases; and irritability of stomach in 28 out of 33, or in the proportion of 84·84 per cent.

The intimate connexion through common nerve-supply, derived both from the pneumogastric and the solar plexus, which Dr. Habershon has recently shown to exist between the stomach and the supra-renal capsules, may explain gastric irritability as a symptom of organic disease of the latter organs, and may be regarded, when taken in conjunction with the peculiar discolouration of the skin, and in the absence of organic disease of the stomach, as pathognomonic of a disorganized state of these bodies.

There is not actual irritation of the stomach in the absence of foreign matter introduced into it, and no vomiting occurs save when food or drink is taken, although it may, when so provoked, continue for some time subsequently to the expulsion of the matters swallowed; the state of the organ is, therefore, that of *irritability* or intolerance of the contact of extraneous substances, and not of actual persistent irritation. It is necessary to bear this distinction in mind, because in no other disease, with a clean and pallid tongue, is there associated this extreme and persistent morbid sensibility of the stomach. It is further remarkable that of the 28 cases in which gastric irritability occurred, *both* capsules were found disorganized in 23 instances. In one case both were "probably" engaged; in another it is doubtful whether the second was affected; and in a third case it was said that only one supra-renal capsule existed, a fact which Dr. Wilks, to whom the case

was reported, very properly doubts. I have observed that where the nerves supplying the supra-renal capsules are hypertrophied, as commonly happens in supra-renal melasma, one or both of these bodies may remain attached, through its nerves, to the liver or neighbouring parts, if great caution be not exercised in removing the kidney; this remark is especially true of the right supra-renal capsule.

It furthermore appears that of the 5 cases in which irritability of stomach is reported absent, only *one* capsule was found diseased in two cases. It is to be regretted that in the reports of 4 of the cases extracted from the records of the Pathological Society of London, no mention whatever is made of the state of the stomach during the patient's last illness; in these 4 cases both capsules were diseased.

The head was affected in 13 out of 35 cases, or in the proportion of 37·143 per cent.; of these there was simple headache in 1 instance; in 5 it was combined with some degree of impairment of the functions of the sensorium, varying from " giddiness " to " delirium " and " convulsions ;" and in 7 cases there was " stupor," " delirium," or " convulsions " only.

In 12 out of these 13 cases *both* supra-renal bodies were dis-organized, and in *one only* out of that number was any trace of disease found in the brain, its membranes, or blood-vessels; in this solitary case there was " congestion " of the brain, and it is remarkable that this was the only instance out of the 13 cases in which the head had been engaged previously to death, that exhibited disease of *only one* supra-renal capsule on *post mortem* inspection.

In 1 case there was " effusion " on the brain, and in another " softening of the brain and inflammation of the arachnoid," but in neither of these was the head reported as affected before death.

It would appear, therefore, to be well established, that organic disease of the brain or other cranial contents, of any form, is of very rare occurrence in Addison's disease, and that headache or other cerebral symptoms, when they do occur in connexion with it, are attributable, not to organic lesion within the cranium, but to the specific influence of the disease itself acting probably through the blood.

Both capsules were found diseased in 28 out of 35 cases, or in the ratio of 80 per cent.; in one case both were " probably " affected, and in another it is doubtful whether one only or both were engaged; in 6 cases only 1 capsule was affected.

The relationship which disease of one or both supra-renal capsules bears to gastric irritability has been already discussed; its connexion with discolouration of the skin now demands a passing notice.

Of the 32 cases in which discolouration was well marked, both capsules were diseased in 25 cases, or in the proportion of 78·125 per cent. of the entire number; in 1 both were "probably" engaged; in 1 it is doubtful whether one or both were implicated; in 1 the second capsule is reported "absent," and in the remaining 4 cases 1 capsule only was diseased.

It thus appears that pigmentation of the skin, like irritability of the stomach, is associated in the vast majority of instances, with disease of *both* supra-renal capsules.

Of 34 cases in which the histological character of the morbid deposit in the supra-renal capsules is given, it was "strumous" or "fibro-strumous" in 21, or in the ratio of 61·765 per cent. of the whole number; in 5 other cases there is some doubt as to its being of that nature; and in the remaining cases the deposit is set down as "fibro-albuminous," "cancerous" (3 cases), "fatty," or "fibro-fatty" (2 cases), and "lardaceous and amorphous."

In 19 cases in which the relative condition of the two supra-renal capsules is given, the left was found in a more advanced stage of disease in 12; it alone was affected in 2; it is doubtful whether the left was not more engaged in 3; both capsules were equally involved in 1; and the right alone was affected in 1 case.

In no single instance where both capsules were engaged, was the right found in a more advanced stage of disease than the left. This is a very remarkable fact, of which, in the present state of knowledge of Addison's disease, it were vain to attempt an explanation.

Of 36 cases in which the other viscera have been examined, complications were found in 24; in many instances several organs or parts were morbidly affected in the same case. The number of instances in which each organ was affected, separately or conjointly, together with the nature of the affection, is given in the following table:—

Organ			Disease		No. of Cases
Lungs,	.	.	Tuberculosis of,	.	10
Do.,	.	.	Solidification of,	.	1
Spleen,	.	.	Enlargement of,	.	3
Do.,	.	.	Congestion of,	.	1

Organ	Disease	No. of Cases
Spleen,	Tuberculosis of,	1
Liver,	Tuberculosis of,	2
Kidneys,	Fatty disease of,	1
Do.,	Tuberculosis of,	1
Heart,	Fatty disease of,	1
Stomach,	Carcinoma of,	1
Do.,	Inflammation of,	1
Uterus,	Carcinoma of,	1
Brain,	Softening of,	1
Do.,	Effusion on,	1
Do.,	Congestion of,	1
Peritoneum	Inflammation of,	1
Do.,	Adhesion of,	1
Do.,	Tuberculosis of,	1
Spine,	Caries of,	3
Sternum,	Caries of,	1
Thorax,	Carcinoma of,	1
Arachnoid,	Inflammation of,	1
Mesenteric glands,	Enlargement of,	2
Do.,	Tuberculosis of,	1
Intestinal glands,	Enlargement of,	1
Lymphatic glands,	Congestion of,	1

It will be observed that tuberculosis of the lungs was pre-eminently the complication most frequently met with; and next to this caries of the spine, enlargement of the spleen, tuberculosis of the liver, and enlargement of the mesenteric glands in nearly equal proportion.

Of the 24 cases in which disease of other viscera was encountered, tuberculosis of some form was the complicating affection in 15 instances, or in the proportion of 62·5 per cent.; and of the separate organs the disease was tuberculous in 18 instances out of 26. It would, therefore, independently of the numerical preponderance of strumous deposit in the supra-renal capsules themselves, as already shown, seem difficult to resist the conclusion that in supra-renal melasma the diathesis is eminently strumous.

In conclusion, I beg to submit the details of a typical case of morbus Addisonii which has been recently under my care, and which, together with the diseased organs, I brought before the Pathological Society of Dublin on the 10th of last December.

John Irvine, aged 16 years, was admitted into the Mater Misericordiæ Hospital, under my care, July 16, 1864.

Six months previously he was attacked, rather suddenly, with severe headache, which, with short intermissions, had continued to the date of his admittance into hospital. About the same time a large blotch, the size of a half-crown piece, and of a dark brown hue, appeared upon his forehead.

He had suffered much from constipation, and about ten days before he came under my notice, having taken a dose of castor oil, he experienced for the first time severe pain in the abdomen.

Three days subsequently, after a certain degree of languor and loss of appetite, a crop of yellowish brown spots of minute size, appeared over the entire cutaneous surface, but in greatest number on the abdomen; and the pain in the abdomen becoming more urgent he sought admittance into hospital.

The face was of a dark olive tint; a large spot of a deeper hue was observable on the forehead, near the roots of the hair; the conjunctivæ were of pearly whiteness; the surface of the body generally was similarly discoloured, but less deeply; and a number of minute spots of a deeper brownish tint were visible on the abdomen. The pulse quick and weak, the tongue dry, the bowels confined, the urine normal; he suffered occasionally from severe headache and pain in the hypogastrium, and on the slightest movement the sight became dim, and the respiration hurried; his weakness was such that he was unable to walk to his bed without assistance The heart's action was feeble, but the sounds were normal. A minute physical examination of the chest and abdomen yielded no evidence whatever of organic disease.

July 27.—Suffered from sick stomach last light; slept very little; headache very severe; pulse 130, weak.

July 30.—Takes scarcely any food; pain in abdomen more severe; pulse 138.

August 3.—Stomach has been sick all night; took no food; complains of great thirst; pulse 150, and barely perceptible.

August 6.—Stomach very sick; extremities cold; pulse cannot be felt at the wrist; tongue dry.

August 7.—Has vomited everything he took during the night; has likewise had empty and bilious retching; pulse at the wrist not perceptible; counted by the heart it was 140; respirations 27; complains of urgent thirst, which is relieved by a little ice.

9, p.m.—Heart's action almost imperceptible; respirations 40 in

the minute; at 10, p.m., he sank from exhaustion, and without a struggle.

Post mortem examination six hours after death.—Body much wasted. Heart small and comparatively bloodless, valves healthy. Liver of average size and of dark olive tint. Spleen in all respects normal. Kidneys of average size and apparently healthy on section. Both supra-renal capsules very much enlarged, hard, and nodulated; the left much larger than the right; the former presented on section the appearance of pale cheese, and in the centre was found about a teaspoonful of thick white puriform matter; right supra-renal capsule not divided. The pale yellow deposit in left capsule examined microscopically was found to consist of small, granular, ill-defined cells, and the granular *debris* of similar cells, amongst which were dispersed molecules of a highly refractile, and apparently fatty character.

Whilst this patient was under treatment in hospital his urine was repeatedly examined, and always found normal in quantity, specific gravity, and reaction, devoid of albumen, and free from deposit of any kind, with the exception of a little mucus.

The treatment consisted mainly in various preparations of iron, sedatives, counter-irritants; and towards the close of the case, when the stomach had become intolerant of food of any kind, of nutritive and stimulant enemata.

Art. VIII.—*On Trichiasis.* By E. Perceval Wright, M.D., Dub.; F.R.C.S.I.; Surgeon in Charge of the Ophthalmic Dispensary at Doctor Steevens' Hospital, Dublin.

In trichiasis the eyelashes are inverted, and so become turned in upon the eyeball, without the eyelid itself necessarily undergoing any change. It seldom, however, happens that all the eyelashes become inverted, unless when the trichiasis is merely one of the symptoms of entropion—an abnormality very constantly confounded by general surgical writers with trichiasis. My present intention not being to write a treatise on this subject, but only to call the attention of the profession to an operation for the removal of this defect, I shall but very briefly, indeed, allude to the signs of this abnormality, to its etiology, and then to its cure.

The symptoms vary according to the number of inverted cilia,

and to the duration of the irritation caused thereby. In ordinary cases the patient generally complains of the sensation of some foreign body rubbing against the front of the eye; upon the smallest increase of light there is great lachrymation; there is some effusion of the conjunctiva, and some slight opacity of the cornea; in very bad cases, such as one sees so constantly in this country, the appearances presented are thus graphically described by Sir W. Wilde:—" There is pain; nictitation; the sensation of a foreign body in the eye; incessant winking; epiphora; chronic inflammation of the conjunctiva; vascularity of the cornea; photophobia; spasmodic action of the orbicularis palpebrarum, and corrugator supercilii muscles; the head is inclined downwards, and generally to one side; to these succeed redness of the tarsal margin, opacity of the cornea, and finally, total loss of vision."[a]

In cases like these there will be no difficulty in finding a number of eyelashes inverted and rubbing against the surface of the globe of the eye. In milder cases it is not so easy to find them, and then it is well to follow the advice of Mackenzie,[b] and to apply the edge of the lid to the eyeball, while raising it up over its surface, in such a way that the iris or pupil forms a contrasting back-ground to the cilia. Trichiasis affects the upper very much oftener than the lower eyelid.

On the etiology of trichiasis much has been written. Passing by such causes as that the cilia in question owe their origin to bulbs, which, though existing during fetal life, did not develop themselves until the age of puberty, and others equally fanciful, it appears now pretty well proven that trichiasis is almost always the result of some prolonged irritation of the ciliary border, such as occurs during neglected catarrhal ophthalmia, and more especially during ophthalmia tarsi (psorophthalmia, or blepharite ciliare). Such exciting causes produce, as pointed out by Wilde,[c] an unhealthy deposit in the interspaces between the roots of the cilia, along with a contracted state of the conjunctiva.

The cure of trichiasis consists in altering the direction of the eyelashes. The simplest palliative treatment consists in removing, one after the other, all the inverted eyelashes. This, however, seldom, if ever, effects a radical cure; besides, as the operation,

[a] On the Causes and Cure of Entropium and Trichiasis, Dub. Jour. of Med. Science. Vol. xxv. 1844. P. 98.

[b] Practical Treatise on the Diseases of the Eye. 4th Edit. 1854 P. 215.

[c] Loc. cit., p. 109.

though slight in itself, often requires to be repeated every ten days, the cure becomes almost as bad as the disease. It was not, therefore, to be wondered at that other means were thought of, in the hope of effecting a more permanent cure. It is not my present intention, as I have stated, to write the history of trichiasis, and so I shall not allude to the many plans for a radical cure that have been suggested during the last century and a-half, many interesting details of which will be found in Sir W. Wilde's memoir on trichiasis; but all these operations may be arranged under the following heads:—

1. The removal of the offending cilia, and the extirpation of their bulbs.

2. The extirpation of the whole row of cilia.

3. The excision of a fold of the eyelids, so as to remove the cilia from the surface of the eyeball; grooving the tarsal cartilage, &c.

4. The dividing the row of cilia, with their bulbs, from the tarsal cartilage, and removing it higher up on the eyelid.

The first three are well known to British surgeons; and modifications of them have been from time to time proposed. Thus the extirpation of the whole row of cilia was suggested, as long ago as 1722, by Heister;[a] approved of, some years later, by Cortum;[b] was modified by F. Jæger[c] in 1818; and, lastly, the operation was improved, in 1844,[d] by Sir W. Wilde, who was among the first to introduce a knowledge of this operation into Britain. The excision of a fold of the eyelids, for the purpose of removing the cilia from the surface of the eyeball, will be found recommended in the works of Celsus, Actius, Paulus von Aegina; and from the days of these fathers of medicine down to the present time, some one modification or other of this operation has been in vogue; of these that of Gaillard[e] appears to me the best.

The last method on the list—that of directly displacing the cilia, and implanting them elsewhere—was first suggested, in 1844, by Dr. Jæsche,[f] and was, almost immediately afterwards, modified by Arlt,[g] at that time assistant to Fischer at the School in Prague, now

[a] L. Heister de Trichiasi Oculorum. 1722.

[b] Cortum de Trichiasi. 1724.

[c] F. Jæger—Dissertatio sistens diagnosin et curam radicalem Trichiasis. 1818.

[d] Loc. cit. 1844.

[e] Bulletin de la Société de Poitiers. 1844.

[f] Medic. Zeitung Russlands. 1844. No. 9.

[g] Prager Med. Vierteljahrsschrift. B. vii. 1845.

successor to F. Jæger in the Allgemeine Krankenhaus, Vienna; and it is this method—which Professor Arlt himself was the first to call my attention to—that I now wish to recommend very strongly to the profession. The details of this operation are very shortly these:—1. The formation of an intermarginal excision. It was chiefly in this particular that Arlt modified Jæsche's operation. Jæsche made his first incision in the conjunctiva; Arlt, on the contrary, adopted Flarer's [a] plan of making the incision between the tarsal cartilage and the cilia bulbs, and thus leaving the tarsal edge to a great extent untouched. Flarer originally proposed this plan for the purpose of extirpating the eyelashes—first making the intermarginal incision, then gently raising up the flap containing all the cilia and their bulbs, and then cutting this off with a sharp scissors; and, though I have seen most excellent results from the plan of Sir W. Wilde, above alluded to, yet had I to perform the operation of extirpating the eyelashes, I would be inclined to adopt the method of Flarer, as by it the bulbs of the cilia cannot fail to be eradicated. In making this incision it will be found of great advantage to insert under the lid a horn spatula (Jæger's or Saunders'); this will help to make the lid somewhat firmer, as well as put it on the stretch. An assistant should now slightly raise the lid upwards until the tarsal margin becomes exposed.

Fig. 1.[b]
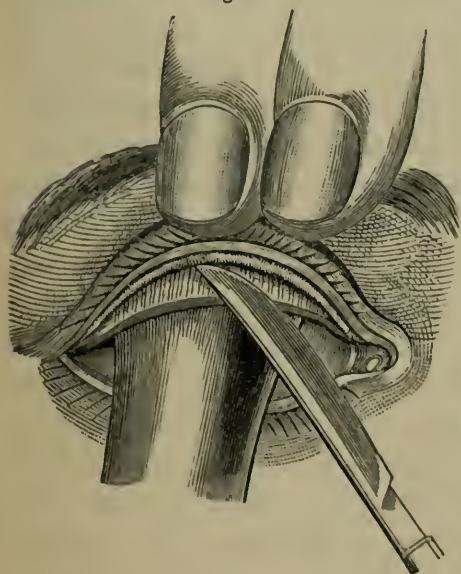
The skin and the cilia are dissected from the tarsal cartilage (*vide* Fig. 1), by means of a sharp scalpel, the incision commencing at the inner angle, cautiously avoiding the lachrymal puncture. Care should be taken to glide the edge of the knife along the surface of the cartilage, so as to avoid wounding the bulbs of the cilia. 2. The next step is to disengage an elliptical flap from the upper surface of the eyelid. The first incision is to be made about two lines from the tarsal edge of the lid; the

[a] Riflessioni sula Trichiasi. Milano. 1828.

[b] Figures 1 and 4 are copied from the excellent manual of Professor von Carion (Lehrbruch der praktischen Augenheilkunde von Dr. C. Stellwag von Carion. Zweite auflage. Wien. 1864.) Figures 2 and 3 from Dr. Josef Pilz's Lehrbruch der Augenheilkunde. Prag. 1859.

second incision is made two or three lines from the middle of the first incision, and slopes down at either side to join it (*vide* Fig.

Fig. 2.
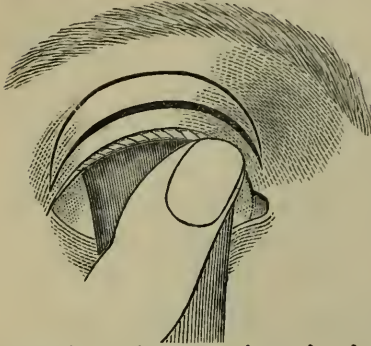
2); this flap is then neatly dissected up, and cut off.   3. The flap containing the cilia, attached at either end to the body of the eyelid, is then freed by passing the scalpel in through the space between the tarsal cartilage and the flap with the cilia, until it makes its appearance in the upper wound; it should be then carried along from the puncture to the outer margin, disengaging in its way any attachments, but not cutting out at either end.   4. The scalpel being withdrawn, the flap is approximated to the upper part of the eyelid by four or five stitches

Fig. 3.
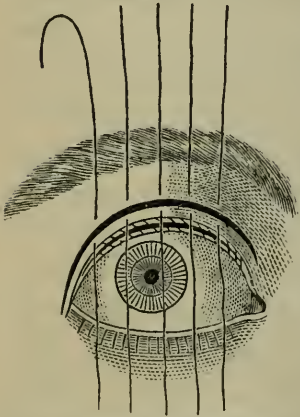
(*vide* Fig. 3); a compress of charpie, with a bandage, is applied, and in three or four days the stitches may be removed; union will be found to have taken place by first intention, and after the lapse of a few weeks not only will all annoyance from the inverted eyelashes have been removed, but there will not be the slightest trace of deformity.

In very bad cases of trichiasis the shape of the elliptical flap dissected up, as described in the second stage of the operation, may be somewhat altered, and the second incision be commenced at one

Fig. 4.
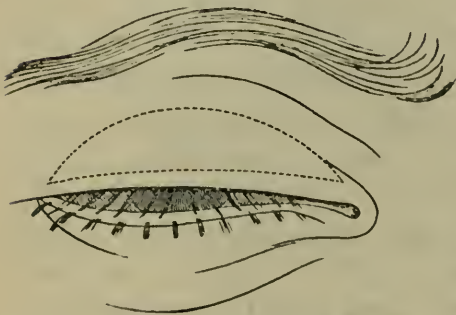
end of the first incision in the eyelid, and then carried upwards as high as five lines above it, and down again to join the other extremity of the same incision—thus making a flap which will have the outline of the moon in its first quarter.   The place of this incision is marked with dotted lines in the annexed figure (*vide* Fig. 4).   In all cases the depth of the excised flap must depend on the amount of the trichiasis.

The operation is most successful when performed on the upper eyelid; but this is the lid most often affected.   When trichiasis occurs on the lower lid relief will be obtained by adopting some

of the many methods for removing a fold of the skin, such, for example, as Gaillard's.

From the Winter of 1860, when I first performed this operation, I have had many opportunities of judging of its success, and I have never yet known it fail. One drawback it certainly has, and that is, the destruction of almost all the Meibomian glands; but then this is true of all the operations for the removal of the cilia, and practically I do not find this objection one of very great importance. Another objection is, that the flap may mortify before having formed a fresh attachment; but this has never happened to myself, and depends, I think in a great measure on the care with which the operation is performed. The use of cold water fomentations are much more likely to lead to mortification of the flap than when it is dressed with charpie. [Since writing the above I have seen Dr. Wald-hauer's paper in the *St. Petersburgh Medi. Zeitschrift*, Bde. II., 301, in which he gives the results of 200 cases operated on in this manner; and in the great majority of these cases the results were most satisfactory.] Von Græfe's bandages here, as in all other operations about the eye, are of the greatest possible convenience, and it may not be amiss to mention that the charpie to be used is nothing but finely shreded Irish linen. On one occasion I recollect that a small slough formed on the centre of the flap, but it did not proceed very far, and on cicatrization the defect was scarcely notice-able. As a rule the eyelids are not subject to sloughing; and if this operation be performed with a sharp scalpel, and the parts cleanly dissected, it is not much to be dreaded.

I believe that this operation of Jæsche's, modified by Arlt, has been successfully performed in this city, by Drs. Smyly and Stokes, at the Meath Hospital, and Drs. Hamilton and Symes, at Steevens' Hospital, and probably by many others; but it has been a constant source of surprise to me that so excellent a method should be so little known of in this country.

Having thus briefly called attention to this operation, I do not feel it right to take up more space by giving a list of cases; of all those operated on in Dublin I have not heard of one unsuccessful case. However pleasant and comfortable it may be to an eye sorely tormented by trichiasis to be deprived of all its eyelashes, everted and inverted alike, yet I think an intelligent patient will have no hesitation in selecting an operation which gives an equal amount of relief, and yet preserves the eyelashes, which latter, in addition to being of great service to the eye, also add so much to the general appearance.

Art. IX.—*On Cleft Palate.*—No. II.   By Maurice H. Collis,
   F.R.C.S.; Surgeon to the Meath Hospital.

In *The Dublin Quarterly Journal* for May, 1856, I published a paper
on cleft palate, in which I gave a short abstract of the various steps
by which the operation for the cure of this deformity had been
brought to a condition of very tolerable perfection.   I did not
attempt to give more than an outline of the principal improve-
ments, as it would have been both tiresome and useless to have
enlarged upon or even enumerated such things as the numerous
knives, needles, and sutures which one or another operator has
found, or fancied, useful.

In the present paper I purpose to give details of additional
operations which I have performed for this deformity; from their
perusal I hope some practical hints may be afforded to those who
may wish to undertake the treatment of such cases.   Knowing the
great difficulties and perplexities which arise to baffle, if possible,
the most patient surgeon, I shall not apologize for any minuteness
of detail, which, to those not interested in the subject, may seem
tedious.   Let me first give a short abstract of the progress of
staphyloraphy and uranoplasty from the year 1819, when Roux
operated on Stephenson, then a student in Paris, and afterwards
Professor of Anatomy at Montreal.   Prior to that date we have no
records in connexion with actual operation, save that we know that
in 1767 Lemonnier had operated for fissure of the soft palate with
success, and that Græfe, of Berlin, had revived, or re-invented, the
operation in 1816, but without a successful issue at that time.
Roux's description of his first case reads like a romance, and is told
with characteristic energy in his *Forty Years of Surgery.*   Ignorant
of Græfe's work in this direction, he was seized with the idea of the
operation on the moment of first witnessing the deformity, and
within two days he carried out his design.   But ten days more
elapsed when the patient, already cured, read a full account of his
own case before the Academy of Science; and shortly afterwards,
on his return to Canada, was appointed Public Lecturer on
Anatomy—a satisfactory proof of the permanent benefit derived
from the operation.

Roux's operations, with trifling exceptions, were confined to the
soft palate; he was singularly methodical, and seems, in all cases, to
have followed the same steps with unvarying regularity.   First, he

inserted, from behind forwards, the needles, armed with flat sutures of well waxed thread. Secondly, he pared the edges; and finally, he closed the fissure, if possible, by tying the inferior, superior, and middle sutures in the order I have given. If the edges would not come together, from scantiness of soft parts, he made incisions, through the velum, along the posterior margin of the palate bone, leaving the aperture either to granulate or be closed by an obturator.

Dieffenbach, in 1834, improved on these incisions by making them through the soft palate, parallel to the edge of the fissure; and unquestionably this was a most important step in the right direction.

Up to 1842 all patients who had submitted to this wearying and weakening operation (as it then stood) were enjoined absolute quiet for many days, and were not allowed to swallow anything, not even their own saliva, until the edges of the fissure had united. Sir Philip Crampton was the first to break through this supposed necessity, and to feed his patients liberally with an abundance of soft and nutritious food; this was a most valuable improvement, as tending to bring about union by first intention.

In 1843 Mr. J. Mason Warren, of Boston, Mass., published in *The New England Medical and Surgical Journal* the results of fourteen cases of soft and hard palate, treated by a new operation. Hitherto fissures in the hard palate had been closed by an obturator, or, in rare favourable instances, by the rude transfer of flaps from one or both sides of the fissure. I shall quote Mr. Warren's description of one of his later operations, as I have not been able to get a copy of his earlier paper:—

"With a long spear-shaped knife, curved on its flat side, and cutting for half an inch on both edges, the mucous membrane was dissected from both sides of the palate, as far forward as the anterior angle of the fissure, and backwards to where the soft palate joins the ossa palati. A pair of sharp-pointed scissors, curved like the knife on the flat side, were now carried behind the soft palate, and the attachments of the latter to the ossa palati cut away, leaving the mucous membrane in front intact, thus affording a continuous flap. The uvula was now seized on either side, and the parts being made tense, the posterior pillar of the palate was freely divided, and the dissection continued backwards until the flap expanded, and not the least resistance was offered to any manipulations. Six sutures were rapidly introduced without difficulty."

In this extract Mr. Warren's two great points of improvement are shadowed out. First, the separation of the muco-fibrous periosteum of the hard palate from the bone, along the whole line of fissure, and outwards, on each side, as far as may be needed, even to the alveolar processes; and, secondly, the division of the muscular fibres of the palato-pharyngeus comprised in the posterior pillar of the palate. By this latter process the soft palate is generally rendered capable of easy approximation, as, without doubt, these palato-pharyngeal fibres are the very strongest antagonists to this action. They draw the divided palate outwards, and cause its edges to gape most widely, and are the special muscles for rendering the perfect velum tense. The levatores palati are less concerned in this divaricating action, inasmuch as their use is to raise the velum, and, in combination with the superior constrictor, to close off the passage into the posterior nares.

Warren's proposal to close the aperture in the bony fissure by a systematic dissection of the soft covering of the bones was a decided novelty, and a vast step in advance. It was based on the perception of the fact, that the imperfection in the vault of the mouth was due less to a loss of substance than to a misplacement; that, in fact, the coverings of the high but broken arch of bone might be brought down to a lower level, and there united without strain; that, to carry out the simile, a false ceiling might be put to the bony palate—a conclusion at which Mr. L'Estrange has independently arrived in this country. Warren's operations have been most successful; they form the groundwork from which all later improvements have sprung, if, perhaps, I except Mr. Fergusson's well-known and important one of dividing the levator palati muscles from behind. In one particular it is possible that we, who have since operated, have departed from Warren's proceeding without due consideration. It will be seen that he advises the completion of the operation at one sitting, and that to effect this he prolongs the dissection of the muco-periosteum backwards to the edge of the palate bones; and, then, with a curved scissors, divides the attachment of the soft parts to the posterior margin of these bones, leaving the mucous membrane in front intact. Now, without going into the question whether the hard and soft palate should always be attempted at the same sitting, it is manifest to all who have done the operation that Warren's method is the easiest to effect this object; the great point of difficulty is invariably at the spot where hard and soft palates meet. There is here, as a rule, such deficiency of the bone, from

the angles being rounded off, as to make it almost impossible to complete the closing of the fissure when the operation is taken at two times. At least one may esteem himself fortunate if there is not a pin-hole or something larger at this spot, which will only close after repeated touches of caustic or tincture of cantharides. Mr. Warren's method of dissection offers a better prospect of success, although I cannot say that the record of his cases is by any means as good on this point as I should have expected.

Mr. Fergusson, the author of the next improvement, founded it upon some dissections of a cleft palate, a rare advantage, and one that justly gives his views the greatest weight, apart from his eminent position as a practical surgeon. He divides the levator palati, with a stroke of a rectangular knife, from behind forwards, cutting it above the level of the velum, where its belly is thickest, before it has spread out upon the velum. This incision, made with a knife whose point is out of sight, requires nerve and anatomical knowledge, and should not be attempted by any who do not feel themselves masters of the situation. To those who have studied the anatomy of the parts accurately, and who take the trouble of measuring, with their eye, the alterations which the bony points of the palate have undergone, or rather their deviations from a proper outline, there is no difficulty and no danger worth mentioning. I have frequently used Mr. Fergusson's knife and method for the right side of the palate, and Mr. Pollock's for the left, as much for the purpose of illustration as for convenience. Mr. Pollock, for the reasons I have given above, uses a knife either straight or slightly bent on the flat, cutting on both edges; this he plunges through the soft palate, close to the hamular process, and then raising the handle of the knife, without increasing his wound in front, he divides the spreading fibres of the levator on the back of the velum and any fibres of the tensor that may be in the way. His knife has the advantage that it suffices for all the steps of the operation in the soft palate.

I now come to Langenbeck's modification of Warren's operation. He uses very clumsy but useful round-edged chisels to separate the muco-periosteum from the bone. His plan of proceeding is good; his first incision is near the alveolar process, somewhat parallel to the fissure, but at as great a distance as practicable from it. This incision may be made with a common scalpel; his chisels are pushed into this incision down to the bone, and the muco-periosteum is forcibly separated towards the fissure. I have tried this method,

and find it act more rapidly than Warren's plan of cutting outwards from the margin of the fissure towards the alveoli. Both may be combined with advantage in some cases. A further aid in shortening the operation (a very material point) may be had by using Mr. Philip Smyly's knife through the nostril. It is a small, square knife, set on the side of a long handle, and capable of being inserted by the nostril, and brought to work along the free margin of the bony fissure. It commences the dissection of the soft parts in this situation best of all knives I have used; and, in one instance, shortened the operation by at least ten minutes. Such are the principal means by which the difficulties of this operation have been gradually lessened, until it has become, in practised hands, one that presents no formidable difficulties, and that does not now necessitate any very lengthened endurance upon the part of the patient. The following cases, exemplify the various steps of the operation in a practical manner, according as the malformation extends through the entire vault of the mouth, or is less extensive. They are in continuation of the series commenced in Volume XXI., page 264:—

CASE III.—Dooley, a farmer, from Queen's County, aged twenty-seven, came to me, in 1856, with a huge fissure through the entire length of the vault of the mouth. There had been hare-lip on one side only, which had been indifferently closed in childhood; or else from insufficient support, subsequently to the operation, the cicatrix had thinned considerably. The alveolar process had been originally widely cleft, and the edges, though now approximated, were not in contact.

Fig. 1.

March 5.—I detached as much of the muco-periosteum as I could, working with curved knives, from the edges of the fissure

outwards to the very margins of the alveoli. The flaps were scanty, and required much stretching to make them meet at all. Lateral incisions were cautiously made, so as to allow the flaps to meet easily for a few lines in the hope that a bar might be got across the gap, as a basis for further operations. However, the flaps were too feeble; there had been much hemorrhage, and much of them sloughed; so that when all had healed, in the course of two weeks, matters were much as before—no union taking place along the margins of the fissure. I consequently abandoned the hard palate, seeing that the gap was much wider than I could reasonably be expected to close. On the 19th I operated on the soft palate in the following manner:—I first passed a strong thread ligature through each half of the uvula, by means of a common Liston's needle; the ends of each ligature were brought outside the mouth, and given in charge of an assistant. Taking Mr. Fergusson's knife in my right hand I passed it into the mouth, and through the cleft, until it was beyond the hamular process. I now made the right side of the soft palate tense by drawing firmly on the ligature, which was previously passed through it, bringing the ligature well over to the opposite angle of the mouth. Turning the point of the knife upwards and outwards, I divided some of the fibres of the levator palati, and rendered the palate tolerably passive on that side. I next divided the posterior pillar of the fauces, containing the fibres of the palato-pharyngeus, with a snip of the curved scissors. This completely paralyzed the velum on this side. Before laying down the scissors I divided the palato-pharyngeus of the other side in the same manner. I now took up Mr. Pollock's knife. I made the left half of the palate tense, in the same manner as the right. Pushing the knife obliquely through the soft parts, just internal to the hamular process, until its point was seen in the fissure, I divided the fibres, which were expanded, fan-shape, on the back of the velum, and was gratified to find this side fall quite passive. It is easy to test the efficiency of this part of the operation by simply crossing the hands, and seeing if the sides of the palate come well into contact without a strain. The sides of the fissure were now pared by a very sharp double-edged and spear-shaped knife. The advantage of such a knife is, that by thrusting it through the the cleft edge of the uvula, then cutting up and down, the paring of the edge is rapidly effected. Three points of suture were inserted by Liston's needles, the material used being house-wife thread. The greater part operated upon united, and the sutures

were removed on the third, fourth, and fifth days—the lower first, the upper last. By a repetition of small operations, at short intervals, I was able to close the fissure up to a line on a level with the hamular processes. Beyond this I could not advance, owing to the width of the gap and scantiness of material. However, the anterior margin of the united part became, ultimately, very firm,

Fig. 2.
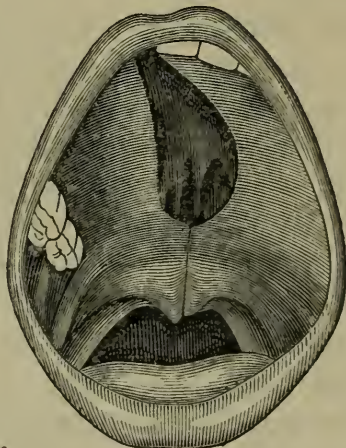
and almost straight, so that Mr. L'Estrange was able to adapt a gold plate, with perfect accuracy, to it, and so the entire gap was ultimately filled up. The satisfaction of the patient was extreme; the improvement in his voice was considerable even at once, and in about a year was still greater. Previously to operation he was scarcely intelligible, and in none of those operated on was the ultimate power of distinct articulation more increased. Considering the hopeless appearance of the gap at first, this result was as gratifying as it was unexpected.

CASE IV.—Maryanne Elliott, age about thirty, cleft originally

Fig. 3.
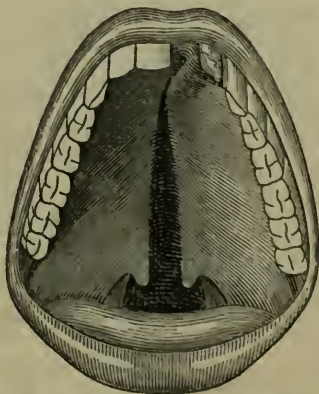
complete, but the gums had coalesced. The fissure ran along the

centre of the soft palate and half of the hard, then turned to the left between the inter-maxillary bone and superior maxilla. The lip was not cleft. The two sides of the cleft had united in front. The fissure in the hard palate was high and narrow, and the soft parts were not too abundant, either where covering the bones or where free.

On the 21st March, 1862, I operated for closure of the hard palate (uranoplasty). I used Mr. Smyly's knife for the first time, and with great advantage. It is, as said before, a small square knife, set sideways on a long handle, capable of being introduced through the nostril. With it I commenced the separation of the muco-periosteum; it effected this rapidly up to a certain point, when Pollock's knife, used through the mouth, completed this part of the operation; the height and narrowness of the fissure made it hard to use any but small narrow knives, and the operation would have been immensely difficult but for Smyly's knife, which proved its value on this the first occasion upon which it was used. There was some strain on the flaps, rather from a tendency on their part to revert to their position in contact with the bones, than from any deficiency of material. Lateral incisions, parallel to the fissure, failed to relieve this tension, and it was not until I had inserted, on either side, wedges of sponge, which not only pushed the centre of the flaps towards each other, but which also interposed a mechanical obstacle to the return of the flaps to their original site, that this strain was overcome. This idea of pushing the flaps, rather than pulling them, was the happy inspiration of the moment, and has since been adopted with great advantage. After forty-eight hours these sponges were removed. Union was satisfactory throughout all the hard fissure, except at its two extreme points. Anteriorly, in narrow fissures, it is hard to get raw surfaces in contact, in consequence of a redundance of tissue; and also because its density renders it unfavourable to union. At the posterior extremity the angles of the bones are rounded off; and there is almost invariably a deficiency in this point, such as often tries the patience of the operator. Mason Warren, Pollock, and myself have all had to complain of the difficulties of closing the lozenge-shaped gap or slit which lies at the border ground of hard and soft palate. Mr. Pollock has suggested a plan which seems efficient to close this gap. If the patient wear, for a time, a small plate, convex towards the mouth, and concave towards the gap, there ensues a pouting of the lips of the fissure into the concavity, with a tendency of the sides to

approximate and unite. In narrow slits I have attained the same end by touching the edges with strong blistering tincture. Where pin-holes remain in the pendulous velum this latter plan of closing is very good, and should be tried before the repetition of a cutting operation. To return, however, to the case of Maryanne Elliott, I was obliged to defer the operation for velosynthesis until the 23rd of April. It presented no special feature, and was performed as in the previous case, and with success.

On the 14th May I closed a small lozenge-shaped gap between hard and soft palate, by a third operation. The pin-hole at the extreme front closed after a few touches of tincture of cantharides.

The speech in this woman had not been very bad, so that the immediate improvement, though considerable, was not so marked as in Dooley's case.

Fig. 4.
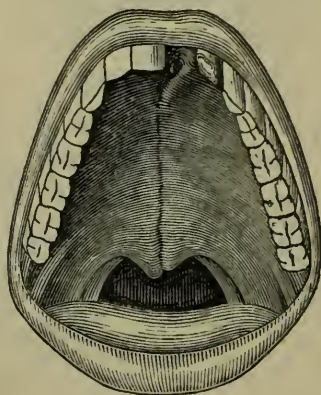
I insert here the figures of Walsh's case mentioned in my former paper, as the first in which Mason Warren's operation had been done in Ireland.

Fig. 5.

Fig. 6.

Case V.—Miss S., aged fifteen, had a congenital cleft of the entire soft palate only, no hare-lip; the anterior end of the cleft was not acute, slightly rounded; a more easy looking case could

Fig. 7.
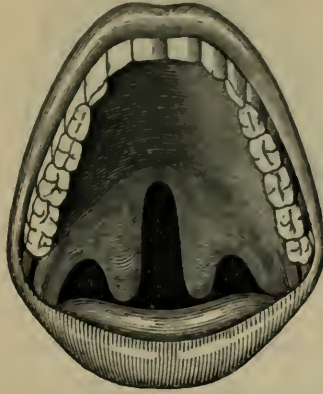
scarcely be met with; yet we encountered unexpected difficulty from want of firmness, not so much in herself as in one of her friends, who insisted on being present during the operation. But for gentle perseverance and determination, and the kind and patient assistance of Messrs. Smyly and W. Stokes, junr., I could not have attempted, much less completed, this operation. It was only necessary to pare the edges and insert the sutures, no division of muscles was required, and yet the operation was long and laborious. I passed a strong ligature through the thickest part of each half of the uvula, and by a steady hold of each, in turn, I was able to stretch it, so as to pare the edges. Five points of suture were inserted, some of them by means of an ingenious needle of Langenbeck's, which was of great service in this case, although in ordinary cases too complex and large. The upper, lowest, and middle sutures were of fine silver wire, and were inserted near the margin of the fissure, while the intervening sutures were of strong silk, and were made to include a good breadth of tissue, being inserted three or four lines from the edge; these last were removed in forty-eight hours, and the wires one after another; the last, near the tip, remaining in more than a week. By accident the tips of the uvula got slightly twisted, so that the left half came in front of the right, and as they were freely pared they united in this position, with a result which, though agreeable, was not anticipated. Usually, in the best cases, some notch remains at the tip of the uvula; here, from the accidental superposition of one half in front of the other, the tip of the uvula, after all was healed, was

delicately fine, and it would have required a close inspection to

Fig. 8.
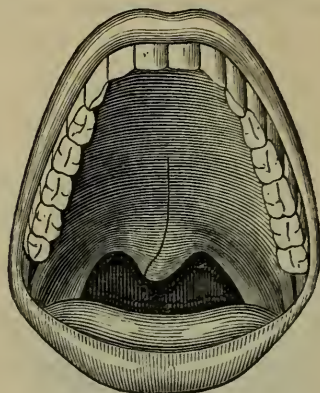
show that any operation had been performed. The conclusion of this case was as satisfactory as its commencement was unpromising, as will be seen by the following letter:—

"13*th Jan.*, 1865.

" MY DEAR SIR,

" I know that you will be glad to hear that your patient (my daughter) has been greatly benefited by the operation. Her articulation is considerably improved—daily getting better. I look upon your operation as a *great success*.

" Believe me,

" Yours very sincerely,

" H. S."

I have another case all but completed, but I must reserve it until some future occasion.

I have occasionally attempted, with varying success, to close apertures in the hard palate, the result of syphilitic or strumous necrosis. In all instances the suppurative tendency was too strong for me; and, although apertures were narrowed, I never completely closed them under such circumstances. Mr. Pollock's plate may solve the difficulty occasionally, and is well worth the trial, as it is better than an obturator, which always tends to widen the gap.

In conclusion, I wish to record a singular instance of a fissure in the hard palate, the result of accident.

Andrew Ekins, aged about twenty, has a slit in the top of the arch of the mouth, the size of a grain of rice. It renders his voice completely nasal. His story is, that when six years old, three sacks of corn fell on his face, breaking his left upper jaw-bone. This

FIG. 1   1ᵇ   FIG. 4   FIG. 5   FIG. 6   FIG. 7   FIG 8

FIG. 2

2ᵇ

FIG 9

G.3

PLATE I

FIG 7   FIG 6   FIG.5   FIG 4   FIG.1

FIG 2

FIG 5ᵇ

FIG 3

FIG.7ᵇ

m   m
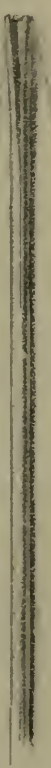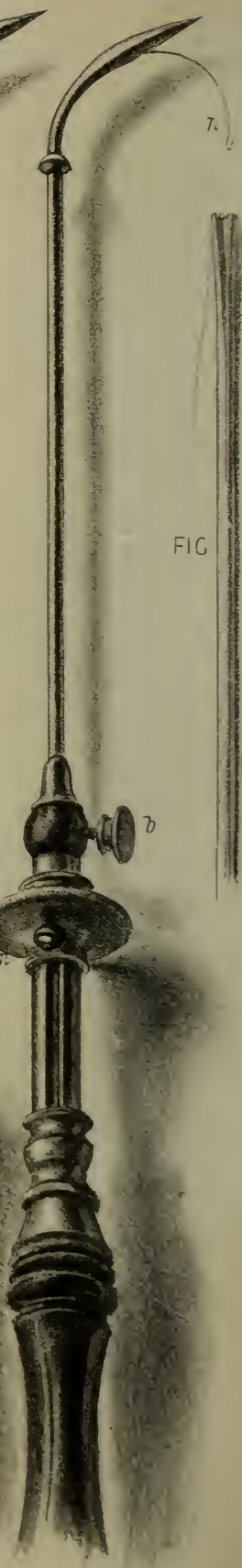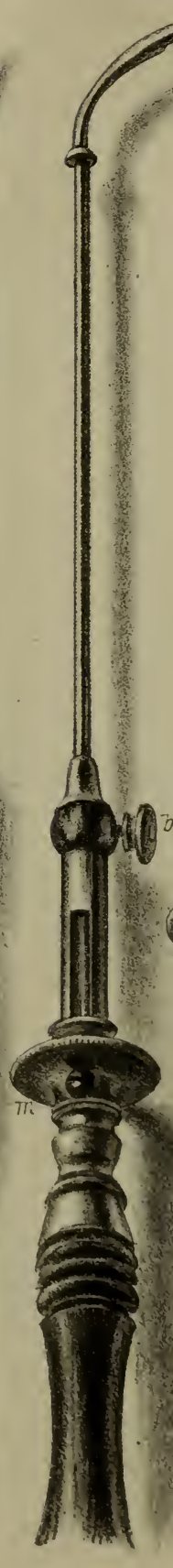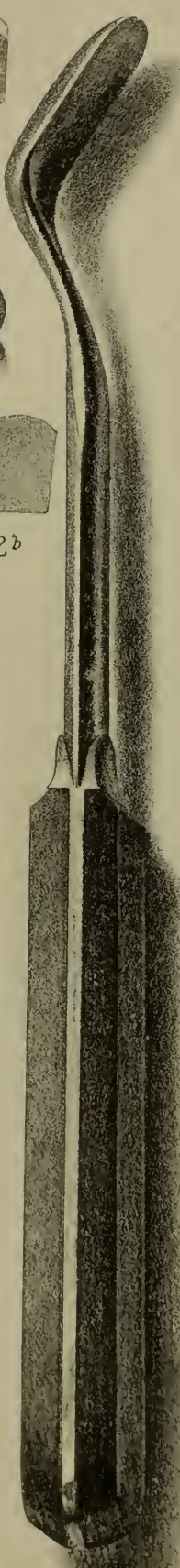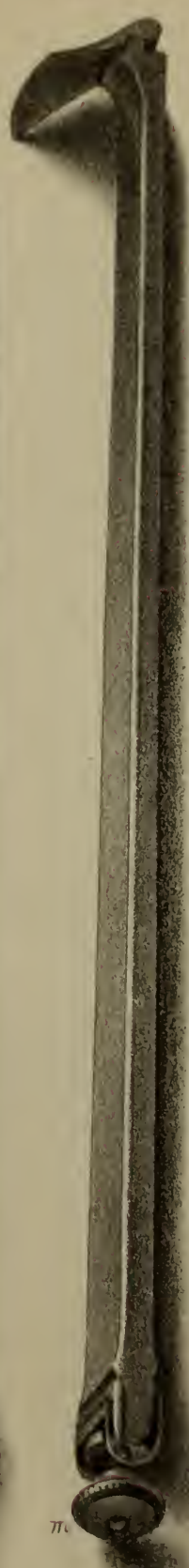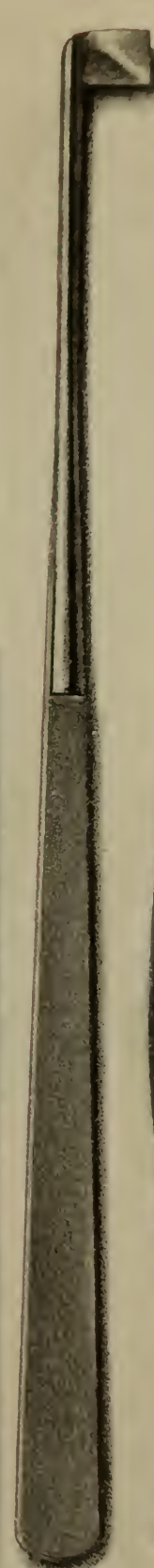
FIG 8   FIG 9

bone is now smaller than its fellows, and irregular; it is on a lower level than the right, and, by its irregularity, causes the deficiency of the size and shape above described. He refused to have anything done to remedy it, and would not even wear a gutta percha obturator.

In the accompanying Plates are figured most of the instruments referred to in the text, or which will be found useful for the performance of the operations.

DESCRIPTION OF PLATES.

PLATE I.

Fig. 1.—Author's modification of Fergusson's knife for division of levatores palati muscles.

Fig. 2.—Fergusson's rectangular knife.

Fig. 3.—A knife given to the author by Mr. Pollock, useful for separating the muco-periosteum from the bone at the anterior angle of a fissured palate.

Fig. 4.—Dr. P. C. Smyly's knife for separating the muco-periosteum from the margins of the fissure. This knife is worked through the nostril.

Fig. 5.—A knife, resembling Mason Warren's original knife, for separating the muco-periosteum. This knife was made for me many years ago, when Mr. L'Estrange and I planned an operation similar to Warren's, in ignorance of what he had done.

Fig. 5 *b*.—The blade of the above.

Figs. 6 and 7.—Pollock's knife for the same purpose. By turning the mill-head (*m*) at the end of the handle, the blade can be flexed to various angles.

Fig. 7 *b*.—The blade.

Fig. 8.—Pollock's knife for dividing the levator palati.

Fig. 9.—Side view of the same.

PLATE II.

Fig. 1.—A chisel-edged knife, for separating the muco-periosteum from the bone; *b*, front view of blade.

Fig. 2.—A sharp knife for the same purpose; *b*, its blade.

Fig. 3.—A broader blade for the same purpose.

Fig. 4.—Langenbeck's chisel for the same purpose.

Fig. 5.—A sickle-shaped knife, useful for dividing the attachment of the soft parts to the posterior edge of the palate bone.

Fig. 6.—Liston's needle.

Figs. 7 and 8.—Langenbeck's needle, with concealed hook for catching the thread. By pushing up the mill-head (*m*) towards the button (*B*), the hook (*h*) is made to protrude; the thread, mounted on the holder (Fig. 9), is put on the hook, and, by letting go the mill-head, the hook shoots back by the help of a concealed spring, carrying with it the loop of thread.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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On the Diagnosis and Treatment of Cancer, and the Tumours Analogous to it. By MAURICE H. COLLIS, M.B., F.R.C.S.I., &c., &c.

THAT the progress, in itself so remarkable, that has latterly been made in physiology and pathology is greatly due to the attention paid to the revelations of the microscope, in its present improved form, cannot be doubted. But, if the combination of microscopical investigation with clinical study has cleared up much that was formerly obscure and unintelligible; rendered safe and scientific much that before was empirical in practice; improved diagnosis; made treatment more sure; and even enabled us to predicate results with a certainty that could not have been attained a few years ago; it must be admitted, that, for a time, microscopic studies led many astray, inducing them to regard minute differences in the forms of the ultimate organic elements as the explanation of the development of all morbid growths, and to forget that these differences are but the manifestations of disordered modes of action. The Irish school has, we believe, more than any other, kept clear of this error. Many causes led to this, but chiefly the importance that has always been attached in it to clinical observation. So great has this been, that the danger has sometimes seemed to be that microscopic studies would be neglected, and an error as great, or greater, than the too exclusive reliance on this mode of research be thus committed. However, those who have been intimate with the younger working men of our hospitals, have long known that the microscope, so far from being neglected, has been held, in its proper place, as a most important aid to clinical observation; and that, of those who have been most sedulous in its use, the author of the treatise before us has been one of the most careful and cautious. This treatise affords an admirable example of the benefits to be derived from the due combination of these two methods of study. It does not aim

at being a complete manual of the subject of which it treats, but it affords a clear and comprehensive view of all that is established on it as true; and, indicating the direction in which further investigations must be made, points out the tendencies of those that are being made. Taking full advantage of his opportunities, as surgeon to one of our large metropolitan hospitals, Mr. Collis uses his microscope to illustrate his clinical experience, and gives us here a philosophical and practical disquisition on the Diagnosis and Treatment of Cancer, and the Tumours Analogous to it, well worthy of an hospital where Crampton, Graves, and Stokes have taught. But we do not mean to attempt a mere eulogy of the book, which, however well done, might fall short of its merits, and yet not satisfy our readers. We prefer to lay before them an analysis of its contents, believing that this will be more satisfactory to them, and more just to the author.

The first chapter is devoted to the consideration of the various forms of cell growth. In the Preface Mr. Collis informs us that he discards the idea of the heteromorphism of cancer, and that he has derived much practical benefit since he has ceased to look for wide points of difference, anatomical and clinical, between it and other infiltrating growths. Once the analogies which exist between them became plain to his mind, the recognition, he says, of their clinical points of contact and divergence became much plainer also. The cancer cell, first insisted on as a special element of cancer by Lébert, and by him considered a cell *sui generis*, is now to be regarded as a modified lymph cell. It would be difficult, Mr. Collis says, to recognize the origin of this cell, " monstrously altered in size," were it not that in other infiltrating growths cells are found, of a medium type, between it and the cell of healthy tissue. In the following passages he traces these gradations of type, and states his conclusions as to the bearings of his views on the structure and classification of tumours; after which he describes in detail, briefly but clearly, the characters of the cell composing the several classes of tumours; but for these we must refer our readers to the work itself:—

" Thus in the simple fibroid tumour, the constituent cells (Fig. 1) are

FIG. 1.   FIG. 2.

but little removed in size and shape from the healthy type ; their pecu-
liarity takes the direction of an arrested development. Again, in the
fibrinous tumour, we find cells (Fig. 2) of a similar character, with an
imperfect tendency to development; in the fibrous tumour the cells
(Fig. 3) acquire a complete development into fibres ; in those forms of
tumour known as fibro-plastic, which, in fact, are fibrous or fibroid
tumours, with a tendency to destructive action, like cancer, but less
intense, the cells (Fig. 4) are larger and caudate, stopping short of cancer

Fig. 3.

Fig. 4.

as to size, and of fibre-cell proper as to development. Then, again, in
acute cancer, the cells (Fig. 5) are small compared with those of scirrhous

Fig. 5.

Fig. 6.

or chronic cancer; while in the latter (Fig. 6) there is, as a rule, more
attempt at caudate development. Now, though the extremes of this
chain may be very unlike, yet the resemblance can be traced up from one
link to another, and the points of difference can be satisfactorily asso-
ciated with differences in the rate and power of development. These,
again, have a practical connection with the clinical features of each case,
and, combined with a proper study of the latter, lead to an accuracy and
certainty of practice formerly not attainable without a life-long and
empirically-founded experience. As a general expression of these facts,
I have ventured to enunciate a formula which seems to satisfy the
requirements of our present knowledge of the subject. It is, that the
nearer the constituent cells of a tumour approach to the healthy lymph-
cell in form and power of development, the more clinically benign is the
tumour ; the farther they are removed in these two particulars from the
healthy type, the more destructive or malignant is the growth. To this
I would add the further observation, that tumours of rapid growth, and
with a tendency to recur, have round or oval cells, which are rapidly
reproduced, and have small powers of development in the direction of

fibres, while the more chronic tumours, as a rule, are composed of cells which have more or less tendency to form fibre. By a combined use of these formulæ or laws, a correct conclusion may generally be deduced as to the rate of growth of any given tumour, and its tendency to return, even when its clinical history and features are unknown to us. It is not, however, expedient to get the habit of examining tumours microscopically, without as accurate an acquaintance as possible with their clinical aspect."

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" My doctrine with regard to the lymph-cell is this—that, although developed in the same manner, and from the same parent cell as the cell of connective tissue, and all the normal cells of the tissues of the human body, yet, being injured in its birth (so to speak), either by external violence, or by a deficient supply of sound material, it has *ab initio* a tendency to perish prematurely, or to develop into some abnormal form. I have briefly instanced the cells of pus and tubercle, and the fibre-cells of cicatricial tissue, as examples of these tendencies: I shall now pass on to consider the bearing of these views upon the structure and classification of tumours.

" The lymph or granulation-cell may multiply without any change in its material size or form, and without any attempt at development. Tumours composed of such cells have a constant tendency to recur in loco.

" Or the cell may not only multiply, but it may also develop into a comparatively perfect and normal fibre. Tumours composed of these cells do not recur.

" Or the cell may deviate in size, and in the size of its nucleus from the natural type, without tendency to develop into fibres. Tumours composed of such cells are recurrent. If the cell and nucleus be undersized, they are only recurrent in loco, and do not poison distant parts ; if, on the other hand, both cell and nucleus are too large, the tumour is recurrent and clinically malignant in proportion to this deviation of its cellular elements from the normal type.

" If, in addition to an increase in the size of the cell and nucleus, there be added a power to develop into forms approaching to fibres, there will be not only recurrence in loco, but a general tendency to poisoning in proportion to the power of development possessed by the cells. Attention to these rules will enable us to judge of the rate of development, the tendency to general or local recurrence, and the ultimate termination of most tumours, and for all practical purposes to group them into a sufficient number of classes for clinical teaching.

" It must be remembered that there is no such identity of form in the component cells of any tumour as that any one or two cells taken at random from its substance can be taken as types of the whole. In any

tumour there will be many elements, for there will be many disturbing causes which will modify here and there individual cells; but it is undeniably true that the bulk of any tumour is made up of cells which are to all intents and purposes sufficiently identical with one another.

"It must also be borne in mind that as all these cell elements have a common parentage, any classification founded upon their characters can only be taken as a general guide by which a given tumour may be judged as to its nature and probable progress, and by which, for the purposes of surgery, it may be named."

The Clinical Aspect of Tumours is the subject of the second chapter. The classification of tumours is here considered; and the tabular view of cancer given in Walshe's book, published so recently as 1846, is reproduced, to show the fanciful names formerly given to cancer in its various aspects. Mr. Paget's classification, founded on both clinical and microscopic studies, is also given, but is objected to by Mr. Collis because of the uncertainty attached to the words "malignant" and "benign," but more particularly because of its including epithelioma as a form of cancer. Mr. Collis does not believe the analogies of this to cancer to be so marked as to justify its being called cancer. This is a point to which he has, in the pages of this Journal, called attention before now; and it is one to which we must return when we come to the chapter in which the disease is fully described. The following is the classification which he adopts; it will be seen that it is more entirely founded on structure than is that of Mr. Paget:—

"A. Tumours which are mainly composed of cells of various forms and powers of development:—

    1. Cancer or carcinoma — *a.* Acute or encephaloid cancer; *variety*, fungus hematodes. *b.* Chronic or scirrhous cancer; *varieties*; atrophic scirrhus, lardaceous scirrhus.

    2. Fibro-plastic tumours; *variety*, myeloid tumours.

    3. Fibroid or recurrent tumours; *varieties*, fibrinous or hemorrhagic tumours, colloid tumours.

    4. Fibrous tumours; *varieties*, fibro-cellular tumours, some polypi, erectile tumours, neuromata.

    5. Epithelioma.

"B. Tumours in which the cellular element is not the one of primary importance:—

    1. Cystic tumours; *varieties*, serous cysts. *a.* Simple. *b.* Proliferous, sebaceous cysts.

(Cancroid.) [brace spanning items 2 and 3]

FIBRINOUS TUMOUR OF TESTIS.

MELANOTIC CANCER OF EYE.

" Accidental condition common to many of the foregoing :—
Melanosis.

    a Cancerous ; *b* Fibrinous ; *c* Cystic.

  2. Fatty tumours.

  3. Enchondromata.

  4. Bony tumours."

The general aspect of each form of these tumours, and the localities in which they are found, are considered in the remainder of this chapter. Two points only of his valuable clinical and pathological remarks can be brought forward here. The first is in reference to the opinion maintained by many that cancer and tubercle cannot co-exist, which is shown to be not without physiological foundation ; the one being a cell formation, with great activity of life and reproduction ; the other, a disease, in which the cells produced are all but devoid of vitality from the first, and destitute of reproductive powers. It appears, however, from the statistics collected by Mr. Sibley, and which are referred to by Mr. Collis as the latest on this point, that, rare as is the co-existence of cancer and tubercle, they are not incompatible, as has long been thought ; as, in 173 *post mortem* examinations of cancer cases, tubercles in the lungs had, according to Mr. Sibley, been found in fifteen.

The second point we have noted for observation in this chapter is the doctrine, laid down with peculiar stress, that, between scirrhus and encephaloid there is no difference which cannot be explained, by their respective rates of growth (in similar localities). Hence it is by no means uncommon to find a tumour, which has been of slow growth up to a certain period, suddenly change its rate of progress ; the small hard mass of scirrhus becomes in one point softer, more prominent and elastic ; the hard and callous skin is thinned and extended over it ; in such cases the new and rapid growth is identical with encephaloid, and, like all acute forms of disease engrafted on more chronic ones, it runs a more rapid and deadly course than if it had been acute from the beginning.

Having described in general terms, in the first and second chapters, the histological and the clinical characters of tumours, Mr. Collis proceeds to consider in detail, in the remaining chapters, the several forms of tumour named in the tabular classification that we have quoted. Here it is that he shows himself to be a true clinical teacher. The cases are narrated at length which have led to the

conclusions enumerated as guiding principles in the introductory
chapters. The descriptions, which are models of clearness and
force, bring the reader, as it were, to the bedside, and enable him
to almost see and handle the things described. Not content with
word-pictures, however, Mr. Collis illustrates his descriptions with
woodcuts and coloured plates—drawn from nature, with the well-
known faithfulness of Connolly; transferred to wood by Oldham;
and to stone by Lewis, under the author's own superintendence.
These have been executed in Dublin, and the beauty and accuracy
of their drawing and finish are worthy of the highest commendation.
Oldham is so well known to our readers that we need say nothing
of his woodcuts; but, as it is the first time we have met a medical
work with coloured illustrations by Lewis, we wish to call especial
attention to the manner in which these are done. Nothing could
exceed them for accuracy and perfection of colouring and finish,
as will be seen by the annexed specimen. They are first drawn the
natural size, and then reduced to the required size by means of a
very ingenious instrument invented by Mr. Lewis, which ensures
the perfect accuracy of the proportions of every part of the drawing.
We only regret that it should have been found necessary to print
and publish in London the work of a Dublin surgeon, illustrated
by Dublin artists. We extract the following description of atrophic
scirrhus from Chapter V., not so much as a specimen of the author's
mode of description, as on account of the atrophic being a form of
cancer but little known, and one that sometimes demands great
promptitude of decision on the part of the surgeon. There is an
excellent drawing in the book of this disease :—

" This term is applied to such forms of cancer as reduce the size of the
organ which is their seat below its natural dimensions. The amount of
this reduction may be small in the early stages, but as the disease pro-
gresses it forms a striking and characteristic feature. Comparison of the
two breasts at once reveals the diminution of the affected one in the later
stage, but even before this sign is at all well-marked, there are others
which may lead us to the diagnosis. The tumour is exceedingly hard
and close, and at an early period draws down the nipple with great
tenacity. The skin also becomes early attached to the tumour, without
acquiring the coarse and hypertrophied texture common to lardaceous
cancer. At no time is the tumour large; it is at first a mere nut, and
seldom reaches the size of a pigeon's egg. Not only is it hard as a stone
from the commencement, but the fibres which radiate from it to the skin
and other neighbouring parts are short and firm ; so that if it be seized

between the finger and thumb it will be found to have strong attach-
ments. According as it advances, it seems to draw into itself by slow
degrees the entire gland, puckering it up and shrivelling it, drawing
down the skin in numberless points, at first about the nipple and then
over the whole breast, and incorporating skin, gland, and tumour in one
indistinguishable mass. This contractive action prevents the tumour
from acquiring a large size; the fibrous tissues are so powerfully
shortened and drawn together as to leave few loculi for the deposit of
cancer-cells; for the same reason there is no infiltration of the skin with
cancer-cells, and as a consequence the lymphatic glands are not enlarged;
yet, owing to the same contractile tendency, the breast is drawn upwards
and outwards towards the axilla, so that the nipple lies an inch and half
out of its proper position.

"In this form of scirrhus we have the nearest approach to a natural
cure of cancer, and from a careful appreciation of its phenomena we may
learn to imitate the indications which nature gives us. To what, we
may ask, is this powerfully contractile tendency due which holds in check
the otherwise deadly deposits of cancer? If we examine a section of
atrophic scirrhus we find it hard and tough, so close as to show a polished
surface in which scarcely a trace of structure can be seen by the un-
assisted eye; here and there, especially on the outskirts of the tumour, a
few loculi of extreme minuteness can be traced filled with a yellowish-
grey and softer material; the colour of the denser parts is a blueish-grey.
A few dots of a buff-yellow are scattered on the surface, and perhaps a
streak or two of white. There is little creamy juice to be had without
much scraping and pressing of the tumour. On using the microscope
the usual cells of chronic cancer can be seen abundantly in this juice and
in the grey contents of the loculi; the buff spots are composed of cheesy
remains of dead cancer-cells, broken up in dusty fragments and in every
stage of oily degeneration. The white lines are the remains of ducts,
and the bulk of the tumour is a mass of condensed cicatricial tissue
(similar to that found in old wounds and the scars of long healed burns).
This is the result of a long continued chronic inflammation of the fibrous
tissues of the gland. As in cicatrices of all kinds, especially of burns,
and as in the chronic inflammation of the liver from cirrhosis, the
tendency of this material to contract is most powerful. It seems to
squeeze the life out of the proper gland-cells and deposited cancer-cells,
and in time there are no loculi left in which the latter can accumulate.
Slowly yet persistently this contraction of the fibrous basis of the gland
progresses, until at length there is a degree of stony hardness produced
that would be almost incredible, and this without any attempt at develop-
ment of cartilage or osseous material, such as we often find in cystic
tumours. The decrease in size is generally well-marked; in a few of the
rarest cases it is so extreme as to leave no outward trace of a breast;

but such a remarkable diminution is the result of many years' contraction; it may well be conceived how many causes may arise to alter the character of the disease or carry off the patient before this point is reached.

"It must ever be borne in mind that cancer, in all its varieties, is still identical in essence, and that the chronic type may take on an acute development at any moment. A blow or hurt of any kind may set up action in the most indolent tumour. Internal effusions or extravasations of lymph or blood may form a nucleus for the active generation of cellular elements, and the most malignant fungus may thus take origin from the most benign of tumours. Hence, in all such cases, the surgeon should be on the watch, and should also put the patient on her guard against such an occurence. As long as the disease is quiescent, no operative interference is justifiable; but the moment a chronic cancer of this type begins to develop into active progress, its career should be cut short. In such a case it is marvellous how much mischief may be done in a few weeks, and how utterly changed for the worse a tumour may become. Large elastic swellings, infiltration of skin, and immediate contamination of glands, may change the whole aspect of affairs with a rapidity that will leave little time to deliberate or temporise. In these cases the energy of the morbid growth seems much greater than in those which have been more acute from the outset. They make up, as it were, for lost time. If the progress of the new development is not checked by leeches, ice, sedative lotions, or plasters, early removal of the tumours should be insisted upon. These are cases in which the surgeon must be not only prompt in forming his conclusions, but resolute in enforcing them on his patient. In many other cases he is not justified in pressing an operation. In this he is guilty of culpable negligence or weakness, if he fail to insist upon one. A cordon of leeches should be applied immediately after the hurt is complained of, and followed up by the application of ice, by a sedative lotion of lead and morphia, or what is sometimes better, by soap-plaster combined with opium. Should these fail, no time should be lost in demanding the full removal of the entire mass before the skin becomes further infiltrated with cancer-cells, as will be evidenced by its becoming more thick and coarse. The incisions should go wide of the tumour, as this condition of cancer is prone to recur, and, in such instances, it sends out its roots to some distance."

For the treatment of the several forms of cancer Mr. Collis advocates the removal of the part, when the circumstances are such as allow of this being done; and he gives very judicious directions as to the cases in which operative proceedings should be recommended. In the lardaceous form the prognosis is much more

unfavourable than in the others. " It leaves but a short margin of time for operation, and, under the best circumstances, it is prone to return."   The occurrence of erysipelas after operation he seems to think a matter not to be regretted.   In fact, he mentions some cases, tending to confirm the notion held by some, that erysipelas attacking the wound prevents the return of the cancer.   To the palliative treatment Mr. Collis directs much attention.   He speaks very highly of ice, for the application of which, for this purpose, he gives the following directions:—

" More directly sedative applications are numerous, but all are not equally effective.   The most powerful we possess is ice; a few morsels are to be put into a bladder or thin gutta-percha sponge-bag; a circle of carded cotton is put round the tumour, for the double purpose of confining the action of the ice and of absorbing accidental moisture; the bag is to be fastened by a cord to the bed-rail, a nail in the wall, or other convenient place, so as to enable the patient to let as much or as little of the ice come in contact with the tumour as is agreeable.   If any chill is produced by the cold application, a warm drink and flannel vest will counteract it.   These minute directions are not to be despised; neglect of them may cause unnecessary mischief, such as bronchitis or even disseminated cancer of the lung or pleura; and I have heard able surgeons object to the use of ice for these reasons.   When ice has been once applied, if it is well borne by the patient, it should be kept up for days, and even weeks; it is surprising how small a cancerous breast will become under its persistent use.   It is most beneficial in the more chronic cases, and is one of the most invaluable aids we possess towards producing or keeping up the atrophic form of cancer, the form to which we may apply the term of a natural cure.   Even the worst type, the lardaceous, is slightly improved by its use; this, as is well known, is the most unpromising for operation.   Still, in a comparatively young and otherwise healthy person, we shall be unwilling to give up all effort to mend matters.   The constant application of ice or iced water may occasionally reduce the tumour to moderate dimensions, and, what is of more importance, it will so act upon the neighbouring skin as to show us to what extent it is really poisoned; and where we wish to give the patient a chance by operation, it will enable us to give her the best possible.   I am satisfied we too much neglect the palliative treatment of cancer, and thus often lose an opportunity of permanently benefiting our patient.   The great secret of success in local treatment is to reduce all action to a minimum, and to do nothing to irritate and everything to soothe.   This cannot be too often repeated."

In the class of cancroid tumours Mr. Collis makes two species,

and three varieties of these we shall only notice one, the fibrinous
or hemorrhagic tumour. This has hitherto been confounded with
encephaloid; and many tumours, labelled as encephaloid or fungus
hematodes in museums, are really, according to Mr. Collis, speci-
mens of this form of disease. He believes them to consist of the
ordinary elements of clot undergoing organization, and he gives a
beautiful coloured plate showing their structure:—

"These tumours originate in a distinct effusion of blood, which
becomes the seat of an organization. While the process of cell-develop-
ment is going on in the original clot a fresh hemorrhage occurs into its
substance; the tumour is increased in this way by successive hemorrhages
and successive organizations of or in the clot. The primary hemorrhage
will generally be traced to a blow or other injury. Sometimes the history
is of a succession of hurts. In other cases there is no account of succes-
sive violence; the primary effusion also may be trifling and insignificant
compared with the ultimate development of the tumour; or, again, it
may be so considerable as to leave little room for the subsequent additions.
Other differences will arise from the distance of time between the
extravasations; in some the interval is so great as to leave room for
consolidation of the clot, the resulting tumour being then firm and elastic
as India rubber; in others the hemorrhage recurs so rapidly that there is
much fluctuation, and in the intermediate cases there will be intermediate
elasticity similar to what is felt in encephaloid cancer.

"In all cases in which I had an opportunity of dissecting these tumours
they were encysted. In some the cyst was merely condensed areolar
tissue, in others it was a bursa, and in others the disease was not merely
encysted, but cystic, that is to say, the hemorrhage had taken place into
cysts, each of which had been the site of many successive hemorrhages,
although some cysts showed evidence of having suffered more in this
way than others close beside them. For convenience these may all be
considered in the present chapter, although the last group belong properly
to cystic tumours."

.   .   .   .

"The structure, then, of these hemorrhagic tumours is the same as that
of a clot of blood undergoing organization—namely, cells and fibres of
lymph in various stages of development mixed with fragments of colouring
matter, broken blood-corpuscles, crystals of hematine and cholesterine,
and all the odds and ends of a clot dissolving into its elements, and
applying them to the formation of new elementary tissues."

The last chapter that we shall notice is No. XV., on epithelioma.
It opens with the following condensed statement of the author's

reasons for regarding this disease as quite distinct from cancer—with which it is generally classed—a subject that he has formerly written on in our own pages; and he here discusses the pathology of the disease very fully and at length :—

" It is of comparatively little importance whether this disease be called epithelioma or epithelial cancer, provided its difference from cancer and its analogies to it be kept clearly in view. For my own part, I have always held that its superficial origin, its slow progress, its indisposition to infiltrate the deeper structures or to contaminate the glands, the certainty of cure which follows its timely removal, and the different appearance of cancer when occupying similar localities, are of sufficient importance to outweigh the points of resemblance which it undoubtedly bears to cancer in its advanced and secondary stages. In its early stage it is strictly an hypertrophy, and in this condition it may remain for an indefinite period. Its second stage is one of hypertrophy and ulceration combined. This stage also, as far as external or cutaneous epithelioma is concerned, is slow to advance into the third and destructive stage, that of infiltration and secondary deposit."

This is the form of tumour that most commonly occurs in the lip and tongue; and, in considering its treatment by operation, Mr. Collis dwells at some length on the mode of operating when the lower lip is extensively engaged in the disease. Plates XI. and XII. exhibit several modes of operating, so as to avoid deformity. Of these, that described in our thirty-second volume, by Mr. Rynd—almost the last act of his life—meets with most favour. When the disease is situated in the tongue, and the irritation is very great, Mr. Collis regards Mr. Hilton's operation of dividing the gustatory nerve, either to render the part painless when operated on, or to put a stop to the irritation arising from the disease, as likely to be very beneficial. This operation has recently been advocated by Dr. C. H. Moore, an abstract of whose paper we lately laid before our readers; and in the " Clinical Records," in our present Number, Mr. Collis publishes a case, in which he adopted this practice with most satisfactory results.

We now conclude our notice of this work; and, in doing so, we beg to congratulate the author on the completion of his task. Mr. Collis is well known to the readers of this Journal as an earnest worker, an able, learned, and accomplished writer, a skilled and truly practical surgeon; and the analysis we have given of this work shows that he brings science to the aid of clinical observation, and bases his art on the sure foundation of the profound truths of physiology.

The Significance of Dropsy as a Symptom in Renal, Cardiac, and Pulmonary Diseases. By W. R. BASHAM, M.D. London: Churchill and Sons. 8vo., pp. 86.

THE small but interesting volume before us contains the substance of the Croonian lectures delivered at the London College of Physicians during the past year. The fact of these lectures having been delivered by Dr. Basham is, of itself, sufficient to command our earnest attention, as no other living physician has contributed more to the elucidation of the pathology of dropsy. The book is divided into three chapters, corresponding to the number of the lectures. Dr. Basham commences by showing that dropsy is not a primary disease, and that it depends more on impeded capillary circulation rather than on defective activity on the part of the absorbents. The impediment in the capillary circulation may arise from three causes:—" 1. A poor, watery, exhausted blood. 2. The presence in the blood of excrementitious or other noxious material. 3. Impediments to the free passage of the blood through one or other of the great organs—the heart, lungs, or liver." Passing to the consideration of Bright's disease, and having prominently put forward the services rendered by the microscope in the study of its pathology, after alluding to the abortive condition of the renal epithelial cells in this disease, he says:—" The very presence of albumen in the urine is assurance of the imperfection of these cells. But this deterioration of cell-growth is not confined, as was at first thought, to that organ alone, whose embarrassment of function is earliest recognized. Even in the acute form of morbus Brightii— cases which have run their fatal course in a few weeks—the epithelial cells of other parts present a granular and imperfect appearance. The epithelium of the mouth, throat, and alimentary passages is granular, and sometimes even fatty; the pavement epithelium of the bladder often most prominently so. The epithelial cells of the bronchial mucous membrane are cloudy and granular, and accompanied by evidence of cellular deterioration identical in character to what we witness in the renal tubes." This degeneration of the kidneys in morbus Brightii is not, then, a local disease confined solely to themselves, " but is a wide-spread depressing influence pervading the organism—operating, perhaps less palpably, but not less fatally everywhere."

The second lecture opens with an inquiry into the nature of the

urinary casts in morbus Brightii, and into the source of albumen in the same disease. With respect to the first Dr. Basham says, " I have, therefore, no hesitation in expressing my conviction that these casts are derived from the metamorphosis or breaking up of the epithelial cells of the renal tubes." With regard to the origin of the albumen, which in this disease comes away with the urine, our author disbelieves the generally-received explanation that it drains away from the blood through the Malpighian capillaries, as a result of obstructed circulation. He seems to think this explanation too mechanical; he says:—" So direct a drain would, it might be supposed, have a corresponding influence in lessening the watery or serous character of the blood in Bright's disease. Yet the opposite is notorious, for the greater the albuminous drain through the kidneys the more watery and serous does the blood become." He also disagrees with Robin, who looks upon albumen as an excrementitious product, which in health is decomposed in the blood by the functions of respiration; the residue of this combustion—urea and uric acid—being eliminated by the urine. Dr. Basham's theory of the origin of albumen in the urine is, that it is a secretion. " Then, if a secretion, whence derived? My answer is, either from the abortive casts, or from the disintegration and rapid breaking-up of these imperfect cells, which are in constant and rapid formation, and which are generated in the place of the true and vigorous gland-cell, whose office it would be to secrete the constituents only of ordinary urine." He does not attempt to prove his theory by any direct experiment; but, arguing from analogy, he considers his position well founded. We know that the contents of all cells are albuminous, and that would tend to help his theory; but still we are not convinced that all the albumen in acute dropsy is the result of simple disintegration of the lining epithelium of the kidneys.

We now come to that portion of the lectures devoted to the consideration of the treatment of renal dropsy; but if we would do justice to the author we should transcribe these pages at length. His remarks on purgatives, on blood-letting, and on stimulants, we earnestly recommend; but we do not wish to curtail them, and must conclude. But, before laying down our pen, we will insert one extract more, as it is so characteristic of the man, and so completely reflects our own opinions:—" Old theories still haunt our practice, and an aggravation of cough and expectoration is still regarded by many as the signal of that imaginary entity inflammation."

And, speaking of treatment, he says:—" It may appear too much of a truism to say that the leading feature is, by every means, to maintain the nutrition of the body in the state of the highest efficiency; but I lay a peculiar emphasis on this apparent truism to caution young practitioners against falling into the errors of common routine practice, which makes blistering, and purging, and other lowering means, the invariable refuge of the inexperienced."

Lectures on the Elements of Comparative Anatomy. By THOMAS HENRY HUXLEY, F.R.S. *On the Classification of Animals, and on the Vertebrate Skull.* London: John Churchill and Sons. 1864.

An Elementary Atlas of Comparative Osteology, in Twelve Plates. The Objects Selected and Arranged by THOMAS HENRY HUXLEY, F.R.S.; and Drawn on Stone by B. WATERHOUSE HAWKINS. London: Williams and Norgate. 1864.

WHEN the British Government intrusted the museum of John Hunter to the London College of Surgeons it was on the condition " that one course of lectures, not less than twenty-four in number, on comparative anatomy and other subjects, illustrated by the preparations, should be given every year by some member of the corporation." For more than sixty years such lectures have been delivered—at first by professional men like Charles Bell, Lawrence, Brodie, and others; and lately by men more purely comparative anatomists, such as Owen, Quekett, Busk, Gulliver; and at this moment the chair is held by the author of these lectures, one of the most able, truthful, and hard-working anatomists of Europe—one whose writings are as eloquent as the knowledge conveyed by them is extensive. We feel sure that the announcement in the Preface of this volume will be received with much pleasure by our readers. " I purpose (says Professor Huxley), should I continue to hold the honourable office of Hunterian Professor, to publish the substance of subsequent courses in the same manner, and so to bring out, eventually, a comprehensive, though condensed, systematic work on comparative anatomy. In *intention*, therefore, this volume is the first of a series, to be followed in due order by a second, ' On Man and the other Primates;' a third ' On the Remaining Mammalia;' and so on." We sincerely trust that the second volume of this

series will soon make its appearance, though we agree with the author that the publishing of so many volumes depends on so many contingencies, that it is much better to let each volume remain in form, independent of the rest. The volume before us contains fourteen chapters; the first six are on the classification of animals; the remainder on the vertebrate skull. We proceed, very briefly, to notice both these sections.

Classification may be of many kinds; but the one here discussed "is meant to subserve the comprehension and recollection of the facts of animal structure, and, as such, is based upon purely structural considerations; hence it may be designated Morphological classification. In it animals are considered not merely as physiological apparatuses—not as related to other forms of life and climatal conditions—not as successive tenants of this earth—but as fabrics, each of which is built upon a certain plan."

The classes of the animal kingdom are given, with some short, but clear, details in reference to each of them, from the lowest, that of Gregarinida, to that of Mammalia. In the fifth chapter the important question is discussed of the arrangement of these classes into larger groups. To commence with the highest; it is clear that the *Mammalia*, *Aves*, and *Reptilia* are united together by certain very striking features of their development; all possess an amnion and an allantois; all are devoid throughout life of any apparatus for breathing air which is dissolved in water. They then equal the *Abranchiate Vertebrata*, in contradistinction to Pisces and Amphibia, which possess no amnion nor allantois (or at least but a rudimentary one), and which are provided, at one time or another of their lives, with branchiæ, hence constituting the *Branchiate Vertebrata*. But again, the former group may be subdivided into two—1st. The Mammals, devoid of branchiæ, and with an amnion and allantois, with *two occipital condyles*, and a well-developed basi-occipital, a single mandibular ramus articulated *with the squamosal; with mammary glands*, and with *non*-nucleated red corpuscles. 2nd. The Sauroids, defined by the presence of a well-developed amnion and allantois, a *single occipital condyle*, a *complex* mandibular ramus articulated to the skull by a *quadrate bone, nucleated* blood corpuscles, and comprising Birds and Reptiles. And, for uniformity sake, we classify the Branchiate Vertebrates into a 3rd. The Ichthyoids—defined by the presence of branchiæ at some period of their existence, and a parasphenoid in their skull; all these forming the first sub-kingdom—VERTEBRATA.

The next large group is that of the Arthropoda, containing the Insecta, Myriapoda, Arachnida, and Crustacea. These, with the group of the Annelida, form the second sub-kingdom of Annulosa. But what of the Echinodermata and the Scolecida?—the first containing the star fishes, sea urchins, &c.; the second, the Rotifera, the Trematoda (flukes), the Tæniada (tapeworms), the Nematoidea (threadworms), and many others. Do these creatures possess any characters in common with the Annelida or Arthropoda? This question is fairly canvassed in the text, and with the following conclusions:—1st. That there is so close a connexion between the Echinodermata and the Scolecida that they can by no means be placed in separate sub-kingdoms. 2nd. That, on due study of all the other sub-kingdoms, there is no place for them anywhere, save, perhaps, among the Annulosa; *but*, until some structural character be discovered, by which all the Echinodermata and Scolecida agree with the Annulosa, it is better to regard the former as constituting a distinct division of the animal kingdom, forming the third sub-kingdom, to be called Annuloida.

The next classes of invertebrate animals are the Cephalopoda, Pteropoda, Pulmogasteropoda,[a] and Branchiogasteropoda. These have all in common the following peculiarities:—A nervous system, composed of three principal pairs of ganglia—cerebral, pedal, and parieto-splanchnic—united by commissures. All possess that remarkable buccal apparatus, the so-called tongue, but which might more appropriately be denominated the odontophore, whence Professor Huxley names this group *Odontophora*. The bivalve molluscs, Lamellibranchiata, stand in pretty much the same relation to the Odontophora as the Annelida to the Arthropoda; they have the same fundamental pairs of ganglia as the Odontophora, but they possess no trace of the odontophore; they are all provided with bivalve external pallial shells, the valves right and left in relation to the body, and they may properly be said to form part of the fourth sub-kingdom—Mollusca.

The following classes—Ascidioida, Brachiopoda, and Polyzoa—exhibit many features in common; and at the same time they have certain resemblances to the Mollusca. But, as in the analogous case of the Annuloida, it appears better to recognize them as a separate (fifth) sub-kingdom, to be called the Molluscoida. The heart, when present, is of a simple tubular or saccular character, and

[a] While protesting against this compound word, we would suggest in its stead Pneumonogasteropoda.

is devoid of any separation into auricle and ventricle, as in the Mollusca, the mouth in all (save one exception, Appendicularia) is provided with ciliated tentacula, disposed in a circle or in a horse-shoe shape, or fringing long arms.

The classes Actinozoa and Hydrozoa constitute one of the most natural (the sixth) divisions of the animal kingdom—the CŒLEN-TERATA of Frey and Leuckart. In all these animals the substance of the body is differentiated into those histological elements which have been termed cells, and the latter are primarily disposed in two layers, an external and an internal, constituting the " ectoderm" and " endoderm." Among animals which possess this histological structure the Cœlenterata stand alone in having an alimentary canal, which is open at its inner end, and communicates freely, by means of this aperture, with the general cavity of the body.

The remaining classes are the Infusoria, Spongida, Rhizopoda, and Gregarinida. What to do with the Infusoria is still a problem with the zoologist. It has lately been the custom to unite all these classes into one sub-kingdom, that of the Protozoa; but recent discoveries tend to widen very considerably the hiatus between the Infusoria and the other three classes. In possessing cilia, as locomotive and ingestive organs—in being provided with a contractile water receptacle, with canals proceeding from it (in some cases at any rate) into the substance of the body—in their tendency to become encysted, and assume a resting condition, the Infusoria undoubtedly exhibit analogies with the lower Annuloida; but the entire absence, so far as our present knowledge goes, of a nervous system, the abrupt termination of the gullet in a central semi-fluid sarcodic mass, and the very peculiar characters of the reproductive organs, separate them widely from the Annuloida; though it seems not very improbable that the gap may hereafter be considerably diminished by observations on the lower forms of Turbellaria. For these reasons Professor Huxley breaks up the sub-kingdom Protozoa into two—that of the INFUSORIA and the PROTOZOA; this latter to include the Spongida, Rhizopoda, and Gregarinida. All these are devoid of any definite oral aperture; a considerable extent, and sometimes the whole, of the outer surface of the body acting as an ingestive apparatus. Furthermore, the bodies of these animals, or the constituent particles of the compound aggregations, such as the Sponges, exhibit incessant changes of form—the body wall being pushed out at one point and drawn in at another—to such an extent as to give rise to long lobate or filamentous processes, which

are termed " pseudopodia." Finally, they all agree in wanting any well-defined organs of reproduction, innervation, or blood circulation.

It must, however, be borne in mind that while it is very difficult, if not impossible, to frame any definition which will yield characters at once common to and distinctive of all the four groups of Infusoria, Spongida, Rhizopoda, and Gregarinida; and, while we acknowledge the analogies that the Infusoria exhibit with the lower Annuloida, still we think many facts likewise point to a close affinity between the former and the Protozoa of these lectures. Without doubt such characters as appear to be common to all are, for the most part, purely negative. Thus the absence of any true hæmal or neural system may be predicated of all four groups; so also they do not present that differentiation into distinct layers which is manifested by the members of the other sub-kingdoms at a very early period of their existence. The encysting process of some of the Infusoria, too, does not differ very materially from that met with in Gregarinida. While, therefore, we acknowledge that recent discoveries among the Infusoria tends to widen very greatly the hiatus between them and the other Protozoa, still our individual opinion is that future investigations among the Rhizopods, Spongiada, and Gregarinida will tend to bridge over this gap very considerably, and that it will probably enable us to frame some more certain definition of the sub-kingdom than the merely negative one that we must be at present content with.

Thus the animal kingdom may be subdivided into the following eight primary groups:—

Vertebrata,

Mollusca,		Annulosa,
Molluscoida,		Annuloida,
Cœlenterata,		Infusoria,

Protozoa.

The sixth lecture is concerned more particularly with the subdivisions of the mammalia larger than orders. So far back as 1816, M. de Blainville pointed out that the mammalia might be divided into three primary groups, according to the character of their reproductive organs; more especially the reproductive organs of the female. These groups are the Ornithodelphia, Didelphia, and Monodelphia The enlargement of our knowledge since then appears, to Professor Huxley, only to have confirmed M. de Blainville's views. About the two first groups there cannot be much discussion. The

Monotremata and Marsupialia are now allowed, on all hands, to be natural divisions; it is far otherwise with the Monodelphia, which contains at least a dozen orders, the arrangement of which has always been a matter of difficulty. The last attempt at classifying this group—that of Professor Owen—according to cerebral characters, has not, we believe, been adopted by any one zoologist of repute either at home or abroad. While we grant that it has some merits, and looks nice upon paper, yet we doubt if any one, save its own author, believes in its infallibility. Professor Huxley explains the classification of Von Baer and Eschricht, based on the differences in the *structure* of the placentæ. There are two principal and distinct forms of placentation among the Monodelphian Mammalia; one of these is called the " caducous," " coherent," or " deciduate;" the other " non-caducous," " incoherent," or " non-deciduate," according as the placenta, after separating from the walls of the uterus at parturition, consists of both maternal or fœtal elements, or of the latter only. Man, the Apes, Lemurs, Bats, Insectivora, Carnivora, Rodents, with the Genera Elephas and Hyrax, belong to the first group. The Artiodactyles, Perissodactyles (minus Hyrax) Cetacea, and most likely the Edentata, belong to the second. " Admitting all the difficulties and gaps in our information, it still appears to the author of these lectures that the features of the placenta afford, by far, the best characters which have yet been proposed for classifying these mammalia, especially if the concomitant modifications of the other fœtal appendages, such as the allantois and yelk sac, be taken into account; and it must be recollected that any difficulties offered by the placental method attach with equal force to the systems of classification based upon cerebral characters which have hitherto been propounded. If any objections, on the ground of general affinities, are offered to the association of Elephas, Hyrax, Felis, and Cercopithecus in the same primary mammalian division of deciduate Monodelphia, they are not removed by constructing that primary division upon other principles, and calling it Gyrencephala."

We have thus given, as briefly as possible, a sketch of the classification of the animal kingdom into sub-kingdoms and classes, and of the class Mammalia into its sub-classes, such as will be found in the first hundred pages of these lectures; but we fear that we have hardly succeeded in conveying to the reader an idea of the vast quantity of information that will be found therein. The matter is so condensed, that to condense it farther would do it but scant

justice.　We append a classification of the Mammalia into Orders, as suggested by the text:—

CLASS I.—MAMMALIA.

Sub-class I.—MONODELPHIA.

With Deciduate Placenta.—Discoid.

ORDER.

I.	Primates,	.	.	. Man, Lemur.
II.	Cheiroptera,	,	.	. Bat, Flying Fox.
III.	Insectivora,	.	.	. Hedgehog, Mole.
IV.	Rodentia,	.	.	. Rat, Hare, Beaver.

Zonular.

V.	Proboscidea,	.	.	. Elephant, Hyrax (? ?).
VI.	Carnivora,	.	.	. Lion, Dog, Seal.

With Non-deciduate Placenta.

VII.	Cetacea, .	.	.	. Whale, Porpoise.
VIII.	Sirenia, .	.	.	. Manatee, Dugong.
IX.	Perissodactyla, .	.	.	. Horse, Rhinoceros.
X.	Artiodactyla,	.	.	. Pig, Camel, Ox.
XI.	Edentata,	.	.	. Sloth, Ant-eater.

Sub-class II.—DIDELPHIA.

XII.	Marsupialia,	.	.	. Kangaroo, Opossum.

Sub-class III.—ORNITHODELPHIA.

XIII.	Monotremata,	.	.	. Ornithorhynchus.

The remaining two-thirds of this volume is devoted to the consideration of the vertebrate skull.　While we feel deeply grateful to the author for giving us this portion of his treatise, yet we confess we would have preferred that the volume had been devoted altogether to that most important subject—classification; and that lectures seven to end had contained the subdivisions of Birds, Reptiles, &c., larger than orders; and then on their subdivisions larger than families; and this because we are so badly off in our Universities and higher class schools for a work on classification, and because, in our judgement, this work, if thus completed, would have been the very one to have placed in a student's hands in attendance on lectures.　And now, while we would wish every student in natural science to make himself familiar with the first third of this very excellent volume, we could not with any justice set him the task, unless he were one of a thousand, to make up the later two-thirds.　While the study of the structure of the human skull would be a first-rate study for a very clever and senior student, yet we confess our experience is, that it would be

wonderfully too difficult a one for the ordinary attendants on natural
science lectures; and we are likewise willing to confess that a subject
so special is not likely to be as useful as the more general one of
classification—a subject which we would, if we had our way, insist
on as being a necessary adjunct to even a second-rate literary
education; but while begging for favours it does not do to be
choosers; we therefore proceed to notice, very briefly, the lectures
on the vertebrate skull. They are eight in number, and are on the
structure of the human skull; on the development of the human
skull; on the skull of the pike, compared, structurally and develop-
mentally, with that of man; on the skull of fishes; on the skulls of
fishes and amphibia; on the skull of reptilia and aves; on the
skull of mammalia, and on the theory of the vertebrate skull.
While, as we have said, we consider this a difficult subject for the
mere art student, yet we think it would be well if every anatomical
student were to make himself master of this portion of these
lectures. Nowhere else will he find a clearer or more perspicuous
résumé of this subject; and the original way in which it is treated
is quite refreshing. Our space will not permit us to give ever so
condensed an epitome; but we must allude to Professor Huxley's
account of the development of the " temporal bone":—" This
temporal bone fills up the great posterior vacuity on each side of
the skull, and consists of a very considerable number of distinct
elements, only distinguishable by dissection, and by the study of
development in man, but which remain permanently distinct, and
undergo very strange metamorphoses in many of the lower verte-
brates. Some of these constituents of the temporal bone, such
as the squamous portion, the malleus, incus, and stapes, are
discriminated by the student of ordinary human anatomy; but
there are many others which he is not in the habit of regarding as
distinct osseous elements; thus the long external auditory meatus
is primitively a distinct bone, termed tympanic, on account of its
affording the frame in which almost the whole of the tympanic
membrane is set. The styloid process is originally a distinct
bone; and, lastly, the pars petrosa and pars mastoidea of human
anatomy are in reality made up of three distinct ossifications, of
which Professor Huxley speaks under the collective name of *Periotic
bones*, because they immediately surround the organ of hearing." The
development of the temporal bone is particularly worthy of attentive
consideration:—" The squamosal and the tympanic elements are
developed in membrane, and at first lie perfectly loose in this

membrane, upon the outer side of the periotic cartilage. The tympanic is a delicate ring, open above; the squamosal is a mere rod, the zygoma, with an expanded posterior end, the squama temporis. The periotic mass, the styloid element, and the auditory ossicles are all preformed in cartilage. One ossification in the cartilage is seen surrounding the fenestra rotunda, and extending a little way upon the promontory; a second, very small, quadrate ossification is situated at the outer end of the superior vertical semicircular canal, and apparently extends into the cartilaginous tegmen tympani; there is no other ossification in the cartilage than these two. As the upper part of the periotic mass in man answers to the front part, and as the lower part corresponds to the hind part of the same mass in the majority of the Vertebrata, I term the ossification on the superior vertical semicircular canal the *pro-otic* bone; that on the cochlea the *opisthotic* bone. The pro-otic ossification rapidly extends over the superior vertical semi-circular canal, and, reaching its posterior end, it includes the front and upper part of the posterior vertical canal; while from the outer end of the anterior vertical canal, or the primitive centre, a mass of bone extends backwards in the periotic cartilage, and in the dry skull appears conspicuously immediately behind the edge of the squamosal. This part of it is, in fact, that one of the ' tria ossicula' of which Kerckringius says—'pyriformâ, acutiore sui parte, squamoso annec-titur.'"[a] The opisthotic ossification likewise extends backwards, and its hinder extremity becoming apparent, in the dry skull, behind the tympanic, is Kerckringius' ossicle, " vix aciculæ majoris caput adæquans." Lastly, the third ossicle, " scutum ovale referens," is that developed upon the posterior part of the posterior vertical semicircular canal, which gives rise to the mastoid process. The pars mastoidea of human anatomy is, therefore, not a single bone, but one, the " scutum ovale," combined with parts of two others; and, as the " scutum ovale" is certainly the homologue of the bone which the Author has termed epiotic in the oviparous vertebrata, he proposes, therefore, to get rid of the confusing term " mastoid" altogether, and to call the specially " mastoid" part of the pars mastoidea, *Epiotic*.

Of the three periotic bones thus developed the pro-otic gives rise to most of the pars petrosa, which is visible in the anterior of the skull, investing, as it does, the roof of the cochlea, the superior

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[a] Osteogenia Fœtuum. 1670. Quoted by Professor Huxley on page 148.

and part of the posterior vertical semicircular canals, the internal auditory meatus, and forming the tegmen tympani. To it, in addition, is due the upper half of the circumference of the fenestra ovalis, and a considerable portion of the pars mastoidea, as has been stated above. The opisthotic bone constitutes all the pars petrosa visible on the base of the skull, furnishes the floor of the cochlea, surrounds the fenestra rotunda, and contributes half the contour of the fenestra ovalis; gives rise to the carotid canal by developing a lamella of bone, which gradually wraps itself round the carotid, and so converts the primitive groove for the vessel into a complete tube, at the same time furnishing the inner part of its floor to the tympanum.

The lower edge of the squamosal is at first nearly straight, but it soon sends a curved process downwards, behind the auditory meatus, and between the tympanic ring and the periotic bones. The tympanic bone is at first a delicate ring, interrupted above, and with tapering ends which approach one another very closely; the anterior end is thicker than the posterior, with an internal process which corresponds in position with the middle root of the zygoma, and eventually unites with it. The lower arched part of the tympanic ring becomes anchylosed with the floor of the tympanum, while its posterior and upper end unites with the squamosal.

We have thus given in some detail the account of the development of the so-called " temporal bone," because we think it one of the most original descriptions in this volume; but we cannot afford further space to allude to the comparative anatomy of this interesting structure, by which it is proved, among other things, that the pro-otic element of the periotic bone is one of the most constant and easily-identifiable bones throughout the series of vertebrate skulls.

Throughout the whole of these lectures on the vertebrate skull Professor Huxley has confined himself to the statement of matters of fact, and to conclusions which follow from the application of a very simple method of interpretation of the facts, viz., that in any two skulls those parts which are identical in their principal relations in the adult state, and in the mode in which they reach this state, are corresponding and homologous parts, and need to be denominated by the same terms. By the application of this method the fundamental unity of organization of all vertebrate skulls is demonstrated; nay, more, it its possible by it to prove that all bony skulls, however much they differ in appearance, are formed upon a common plan. The enunciation of these results alone is *a* "Theory of the Skull," but it

is by no means what is commonly understood as *the* theory of the skull; for it treats of the skull independently of any other portion of the osseous system. On the other hand, the commonly received " Theory of the Skull" embraces not only such a generalized statement of the facts of cranial structure as this, but adds an hypothesis respecting the relations of the skull to the spinal column, and assumes that the bony cranium consists of modified vertebræ. Let the inquirer read these pages, and we feel convinced that he will perceive that, though the well-established facts regarding the structure and development of the skull place the doctrine of the unity of its organization upon a perfectly sure and stable footing, yet they as clearly negative the hypothesis that the skull is in any sense a modification of vertebræ.

In this notice we have but imperfectly shadowed out the peculiar excellences of these lectures. When the reader has obtained the volume and perused it, we feel inclined to believe that he will agree with us that English scientific literature of late years has not been enriched by the publication of any more valuable work.

The Osteological Atlas contains a series of illustrations of the various parts of the skeleton of man and the other vertebrate animals.

The figures are intended simply to aid students in comprehending the general arrangement of the bony framework of the vertebrata, and some of its most important modifications. Mr. Waterhouse Hawkins is responsible for the accuracy of the artistic execution of the drawings, while Professor Huxley's share of the work consisted in the selection, the arrangement, and the nomenclature of the parts of the objects figured.

The publication of this atlas supplies a want often felt by the student of comparative anatomy. The figures are clearly printed; and throughout the series of plates the letters on the figures retain the same signification unless the contrary be expressly stated. The work, though of atlas size, is published at a remarkably low price; and we trust will, on account of its intrinsic merits, meet with a very large circulation.

The Use of the Laryngoscope in Diseases of the Throat, with an Appendix on Rhinoscopy. By MORELL MACKENZIE, M.D., Lond., M.R.C.P.; Physician to the Dispensary for Diseases of the Throat.

WE have been anxiously looking for a book on the art of laryngoscopy which would serve as a hand-book to the subject. As yet no such work has appeared in English. Dr. Mackenzie's is the nearest approach to it that has come before us. We feel confident that when Dr. Mackenzie completes the subject, by the volume on *Diseases of the Throat,* including *The Jacksonian Prize Essay for* 1863, *On the Pathology and Treatment of Diseases of the Larynx,* promised in the volume before us, that the want so much felt will be fully supplied.

The first chapter is devoted to the history of the instrument, and gives due credit to Levret, Bozzini, Senn, Babbington, Bennati, Baumês, Liston, Warden, Avery, Garcia, Türck, Czermak.

He clearly shows that though all the predecessors of Czermak knew the principles, they, none of them, completed the art. When speaking of Bozzini's laryngeal speculum Dr. Mackenzie says:—" The elements of laryngoscopy were undoubtedly contained in the 'light conductor;' but it has been justly remarked, by one of the greatest living writers, that ' no art is complete unless another art, that of constructing tools, *and fitting them for the purpose of the art,* is embodied in it.'" This is what Czermak has done for the art. "The fact that no improvement has been made in the mechanism of the laryngoscope for the last five years, though a great number of practical men, in all parts of the world, have been constantly working at the subject, is the strongest testimony to the value of Czermak's labours."

The second chapter is devoted to the instrument, and the third to the mode of using it. The fourth is the description of the parts in health. The fifth to the accessories—auto-laryngoscopy, reciprolaryngoscopy, infraglottic-laryngoscopy, &c.

The sixth is on the application of remedies. In this chapter a very lucid description is given of the mode of using many valuable instruments, among which we may mention, as the most important, Lewin's *pulverisateur,* for the inhalation of fluids in a very finely divided state, and Dr. Mackenzie's own *laryngeal galvanizer,* of which we gave a very full description, with a wood-cut of the

instrument, in a recent number of this Journal, when we reviewed his *brochure* on galvanism.

The seventh chapter is on operations. In this chapter the author describes two very valuable instruments—the laryngeal lancet, and the laryngeal forceps, scissors, and écraseur. The latter is a most ingenious contrivance, combining three instruments, and being at the same time perfectly simple in construction, easily cleaned, and the manipulation comparatively simple.

All Dr. Mackenzie's instruments have this great advantage, that the motions are communicated by means of a trigger worked by the index finger, leaving the rest of the hand to hold and steady the instrument. Chapter VIII. is on the manipulation of laryngeal instruments; concluding with a list of the various works which have been published on laryngoscopy.

The appendix is on rhinoscopy.

On the Anomalies of Accommodation and Refraction of the Eye; with a Preliminary Essay on Physiological Optics. By F. C. DONDERS, M.D., Professor of Physiology and Ophthalmology in the University of Utrecht. Translated from the Author's Manuscript by W. D. MOORE, M.D., Dub., &c., &c. London. 1864.

A LITTLE thought will convince the careful reader that this is one of the most important volumes yet published by the New Sydenham Society. Elaborated by a master mind, translated by a skilled and practised hand, this work, in which will be found the results of many years' experience, and of the examination of many thousand eyes, marks quite a new era in ophthalmic science. In this volume science and practice meet to help each other; in it science celebrates her triumph, " for it is at her hand that this branch has acquired the exact character which makes it worthy of the attention of the natural philosopher and the physiologist. Most satisfactory was it, indeed, to see how, when engaged in accurately distinguishing between anomalies of refraction and accommodation, and excluding every condition foreign to these anomalies, the system assumed, as if spontaneously, an elegant simplicity; and most pleasing was it to witness the cause and origin of many an obscure type of disease emerging into the clearest light. In it practice, in connexion with

science, enjoys the rare but splendid satisfaction of not only giving infallible precepts, based upon fixed rules, but of being guided by a clear insight into the principles of her actions—advantages the more highly to be estimated in proportion as the anomalies in question are of more frequent occurrence, and as they more deeply affect the use and functions of the eyes." And so it was not strange that the study and treatment of this subject should be to Professor Donders as a labour of love; the more so as he felt proud in being called upon to elaborate it for a country in which Young (1801), Wells (1811), Ware (1812), Brewster, and Airy had pointed out the track which had only to be followed; and happy in being able to offer the work to many highly esteemed friends and colleagues, whose proofs of kindness and affection have left many agreeable recollections of his visits to England. Nor, while thus gracefully acknowledging his obligations to our countrymen, does he forget his friend and translator, who, with indomitable courage and unwearied patience, perused through and translated some fifteen hundred pages of manuscript, with a success which merits the cordial thanks of the author, and deserves to be appreciated, not only by all the members of the society but by every reader of this volume.

We believe we will best consult the interests of our readers by offering to them a brief analytical notice of the contents of this work. In doing this we ask their kind indulgence, as it is by no means an easy task to condense a subject so complicated in its nature; but we have this satisfaction, that if we fail to make Professor Donders' meaning intelligible, the reader has the volume to refer to, in which he will find the whole subject made as clear as possible to the practical physician.

The work is easily divided into two portions, each of which we will examine in detail—first, the general; secondly, the special part; this latter relating to the anomalies of refraction and accommodation, the former being chiefly introductory. The Introduction treats of—*The conditions of accurate vision—function of the retina.* In order to see an object it is necessary that an inverted, but well-defined, image thereof be formed on the surface of Jacob's membrane, and that the local change here excited be conveyed by the fibres of the optic nerve to the brain, and again, in an inverted direction, be projected outwards. We therefore say that we see the object, although, properly speaking, only the projected retinal image stands, as it were, before our eyes. Now, every disturbance

of vision depends on a disturbance in one or other of these con-
ditions, or in both.　If, through some defect in the retina, optic
nerve, or brain, the projection outwards be disturbed, the affection
is amplyopiic or amaurotic; again, if no image be formed, or if the
image be clouded through diffusion of light on the eye, and the
retina, optic nerve, and brain be sound, there must be some opacity
in the optic media; and, lastly, if both these be perfectly normal,
and if the image of objects, placed at the ordinary distances of
distinct vision, be not formed on the bacillar layer of the retina—or
even if, through some abnormality in the curving of the surfaces, no
defined image is, on the whole, produced, there must be some
anomaly in either the refraction or accommodation.　Thus the
lesions of vision are of *three* classes—amplyopia, opacities, and
anomalies of refraction and accommodation; so if the power of
vision of an eye be impaired, it behoves the physician to find out
which of these three kinds of disturbances exist.　A glance into the
eye with the ophthalmoscope will at once enable us to determine
whether there be any opacity of the media.　If such do not exist,
then the next step is to determine whether the eye is amplyopic,
which is easily found by the aid of convex glasses; if with these
perfectly-defined vision can at no distance be obtained, the case is
one of amplyopia; if it can, then we have to deal with an anomaly
of refraction or accommodation.　The lesions of the former are to
be sought in the structure of the eye, in the condition of rest, with
the attendant action of accommodation; of the latter, in the abnormal
action of the internal muscular system of the eye, as we proceed to
notice in the first chapter.

Chapter I.—*On Accommodation.*—In the normal eye the retina
is placed precisely at the focal distance of the dioptric system—
parallel rays have, therefore, their principal focus on the retina, and
the object from which these rays come is accurately perceived; the
rays, however, from a near object proceed in a diverging direction,
and their conjugate focus should consequently lie *behind* the retina;
and still the eye is able to perceive near objects just as accurately
as far ones; it has, therefore, the power of bringing divergent rays
into a focus on the retina.　Now, this power of bringing, at will,
rays of different directions into a focus on the retina is the *power of
accommodation of the eye.*　That the normal eye possesses this power
is easily proved.　Every one knows by experience that we can
distinguish objects at different distances clearly and distinctly, *but
not at the same time.*　Let a veil be held a few inches from the

eye, and a book at a greater distance, we can then at will see accurately either the texture of the veil or the letters of the book, but never both together; and nothing is more certain than that while looking from one to the other a change is produced in the eye itself. The question then arises, in what does this change consist? Many opinions have been broached on this subject; but it is now established, in the most conclusive manner, that this *change consists in an alteration of form in the lens, its anterior surface becoming more convex, and approaching the cornea.* Young, in 1801, suggested this; but the direct proofs were given, only a few years ago, by Cramer. In 1823 Purkinje called attention to the reflected images of the anterior and posterior surfaces of the lens; in 1837 Sanson made them available in the diagnosis of cataract. For this purpose they have now lost all value; but they give an infallible answer to the question, whether the lens undergoes a change in accommodation, either of form or of situation. We will see how this is. The anterior surface of the lens is a convex mirror; the posterior surface, or rather the anterior surface of the vitreous humour corresponding thereto, represents a concave mirror. If we hold a bright flame at one side of the eye, and look into the organ at the other side, we will clearly discern three little images; these images are but feebly illuminated; the difference in refraction between the fluids of the eye and the lens being but small, the reflexion is inconsiderable. If a line, drawn from the flame to the eye, forms an angle of about 30° with the axis of vision, and if we look at the other side, likewise at an angle of about 30° with the axis of vision, into the eye, the three little images appear flat, close to one another in the pupil (see Figs. A and B). A represents their situation

in the eye accommodated for distance; B in the eye accommodated for near objects. In both *a* is the reflected image of the cornea, *b*

that of the anterior surface, and c that of the posterior surface of the lens. Cramer viewed them magnified ten or twenty times. He thus convinced himself that b is, in accommodation for near objects, considerably smaller; and he thence correctly inferred that the anterior surface of the lens increases in convexity as the radius of curvature diminishes. Helmholtz has subsequently stated that not only the apparent but also the actual size of c diminishes a little in accommodation for near objects, and that consequently the posterior surface of the lens also increases in convexity, though this increase is very slight. If we compare Figs. A and B, we shall see that in B the image b is approximated much more to the reflected image a of the cornea, which of course is stationary, than in A. From this Cramer inferred that the anterior surface of the lens, which had become more convex, now comes also to lie closer to the cornea. Helmholtz has decided that the posterior surface of the lens in accommodation does not change its situation. So far for the fact that a change does take place in the lens. The next inquiry naturally was, how is this change effected? By a process of exclusion; after having passed in review many theories on this interesting subject, Professor Donders concludes that it can only be attributed to the ciliary muscle, which would then possess the important quality of accommodation; but the mechanism by which this little muscle effects the alteration in the form of the lens is not yet satisfactorily or convincingly brought to light. The question, however, is now brought down to a very small compass.

Before leaving this subject we may remark that on the instillation of atropine the muscular system for accommodation is paralyzed, the eye remaining accommodated for its farthest point, and that in cases where the iris is absent the range of accommodation is not destroyed. The cause and mechanism of accommodation being thus in great measure ascertained, it is necessary to define its *range* under various circumstances, and to find some simple numerical expression for it, so as that, when we find a departure from the normal condition of the eye, we know what standard to refer to. Let r (remotissimum) be the absolute farthest point of distinct vision, and p (proximum) be the absolute nearest point; then it is quite sufficient to know the distance from the farthest and from the nearest point of distinct vision to find the range $\left(\dfrac{1}{A}\right)$ by the following simple formula:— $\dfrac{1}{A} = \dfrac{1}{P} - \dfrac{1}{R}$. Here A is the focal length of a

lens which gives a direction to the rays from the nearest point of distinct vision p, as if they came from the farthest point r. The eye in a condition of rest is accommodated for the distance between the anterior nodal point k (a point situated about three lines behind the anterior surface of the cornea) and r; this $= R$; in the strongest tension for accommodation for the distance between this point and p; this $= P$. In the former case the rays diverging from r are united in the retina; in the latter those diverging from p. In accommodation the eye must, therefore, be so altered that the rays proceeding from p, in the vitreous humour acquire a direction equal to that of the rays proceeding from r in the non-accommodated eye. This can be effected by placing an auxiliary lens in k, and we may thus imagine the eye away, and suppose that the auxiliary lens in k is in the air. The lens now represents the accommodation of the eye, and its power the range of accommodation. Its focal distance, A, is found by the formula above mentioned, $\dfrac{1}{P} - \dfrac{1}{R} = \dfrac{1}{A}$. Consequently A is the focal distance of the auxiliary lens, of which the eye avails itself in accommodation; and, as the power of a lens is inversely proportional to its focal distance, $\dfrac{1}{A}$ or 1 : A *expresses the range of accommodation.* It is convenient to represent the value of A in Parisian inches, especially as the focal distance of lenses is usually stated in the same; and in selecting spectacles it is well to recollect this fact. To illustrate the above, let the distance P of the nearest point $= 4$ inches, that of the farthest point of distinct vision $R = 12$ inches, then the range of accommodation will be $\dfrac{1}{4} - \dfrac{1}{12} = \dfrac{1}{6}$. If the farthest point lie at an infinite distance, $R = \infty$, and the nearest point at 5 inches, then the range of accommodation will be $\dfrac{1}{5} - \dfrac{1}{\infty} = \dfrac{1}{5}$. In the first case, the range of accommodation is represented by an auxiliary lens of six, in the latter by one of five inches. This same form of expression Professor Donders applies to all lenses; the power may always be regarded as inversely proportional to the focal distance F, and therefore find its expression in 1 : F. If the focal distance be negative it becomes $-$ 1 : F. Glasses of $\frac{1}{10}$, of $- \frac{1}{8}$, &c., therefore mean glasses of ten Parisian inches positive, eight Parisian inches negative focal distance, &c. We shall see by-and-by that the degrees of anomalies of refraction may be expressed in a similar mode, and that it

is thereby, at the same time, shown by what glasses they may be neutralized.

It is of some importance to possess some simple method of determining the points p and r with sufficient accuracy for practical purposes. The determination of r is effected by fixing with both eyes an object some twenty feet distant, and determining whether the object is seen with perfect accuracy with the unassisted eye, or whether the sharpness of the object can be increased by glasses. If no improvement is attainable by glasses, r lies at least twenty feet distant, which may here be equably represented by an infinite distance ∞. As test objects none surpass the test-types of Dr. Snellen, in which each number corresponds to the number of feet at which a sharpsighted eye distinguishes them. The determination of the nearest point p may be effected by means of a wire optometer, or by observing the distance at which small type is read; the ordinary near point is five inches.

Chapters II. and III. treat of *Defects of Refraction and Accommodation in General.* Hitherto these defects had been mixed up, more or less, one with the other. By refraction of the eye we understand its refraction in a state of rest; the term therefore applies to the refraction of the eye whose muscles of accommodation are paralyzed or inactive, and to the refraction of the dead, but otherwise unaltered, eye. We have seen that the farthest point of distinct vision corresponds to a state of rest of accommodation, and that it is only accommodation for an adjoining object, which is an active operation. The stronger this action is, the nearer is the accurately seen point. Accommodation is therefore the voluntary action, whereby the eye becomes adjusted to a nearer point than is the case in the state of rest of accommodation. Refraction is dependent on the anatomical condition of the component parts of the eye; accommodation depends on the physiological action of muscles. With regard to refraction we call the structure of the eye normal; when, being in a state of rest, it brings the rays derived from infinitely distant objects to a focus, exactly on the bacillar layer of the retina (*vide* Fig. 1), or when parallel incident rays unite on that layer, such an eye we call emmetropic (from ἔμμετρος, modum tenens, and ὤψ, oculus). This name expresses perfectly what is meant. The eye cannot be called a *normal* eye, for it may be abnormal or morbid and yet be emmetropic; neither can it be said to be a *normally constructed* eye, for it may be even abnormally constructed and yet emmetropia exist. Emmetropia, then, is met with when the

principal focus ϕ of the media of the eye at rest falls on the anterior surface of the most external layer of the retina. Now the eye may
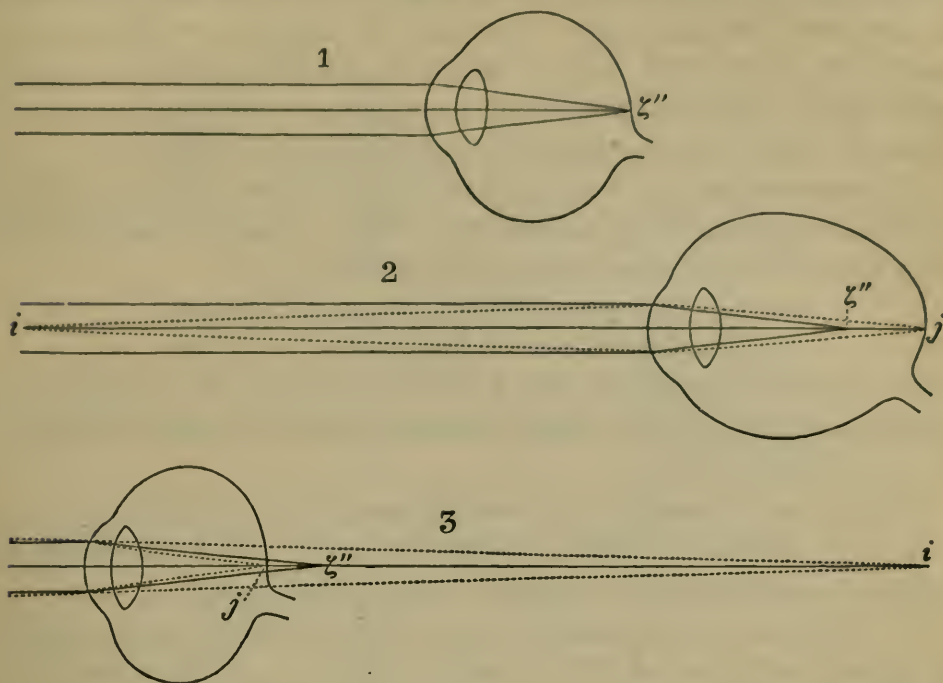
deviate from this condition in two respects. The principal focus ϕ at rest may fall *in front of* (Fig. 2) or *behind* the most (Fig. 3) external layer of the retina. In either of these cases the eye is *ametropic* (from ἄμετρος, extra modum, and ὢψ, oculus); but in the former, where the principal focus falls *in front* of the bacillar layer, the condition may be called *brachymetropia ;* in the latter, where the principal focus falls behind the bacillar layer of the retina, the condition may be called *hypermetropia.* Brachymetropia is nothing else than myopia, and this name is used only for uniformity. Now, it is evident that myopia and hypermetropia *are the opposite conditions of ametropia.* The distance (R) of the farthest point of distinct vision is the foundation on which they rest. To make near objects visible is the work of the muscles of accommodation; under their maximum action the eye is adapted to its nearest point. With advancing years, as we shall better understand by-and-by, the range of accommodation diminishes; therefore, in an emmetropic eye, at a certain period of life, the nearest point will be so far removed from the eye as to render minute operations on near objects difficult. This condition is called *Presbyopia.* It is quite illogical to contrast presbyopia with myopia; both in an anatomical and physiological point of view they belong to very different categories. Myopia is

based upon an *abnormal* condition of the eye; presbyopia is the *normal* condition of the *normally constructed* eye at a more advanced period of life; and indeed it may happen that they may both occur in one and the same eye. An eye, for example, which can see accurately only from twenty inches to fourteen inches is at the same time myopic and presbyopic; and were presbyopia an anomaly it would *not* be one of refraction, *but* of accommodation.

Accommodation is, as we have seen, based upon a change of form in the lens, produced by contraction of the internal muscles of the eye; hence its anomalies may be dependent

        a. On disturbance of the lenticular system.

        b. On disturbance of the internal muscles.

Of the disturbances in the lenticular system, the condition of total absence of the lens, which is termed aphakia, is almost the only one to be referred to.

Of the disturbances of the internal muscles the chief are:—

1. The weakness which not unfrequently manifests itself by definite phenomena after different exhausting illnesses.

2. The more or less complete paralysis, which, probably without exception, is connected with a similar condition of the sphincter of the iris, and often occurs only as a part of the paralysis of the oculo-motor nerve.

3. The spasm, which, however, occurs much more rarely than the paralysis, and is based, like this, upon a direct or indirect abnormal action of the nervous system. Besides this rarer form of spasm, we will find a persistent increase of contraction of the muscles of accommodation, dependent on habit, to occur very frequently in hypermetropia.

It is well to bear in mind that the condition of refraction exercises a very important influence on the ordinary use of the range of accommodation, and consequently upon accommodation itself. These modifications cannot be separated from the states of refraction on which they depend, and come, therefore, with them under consideration; hence it was expedient to give a sketch of the subject of accommodation before proceeding to treat of the anomalies of refraction. In defining the anomalies of accommodation their cause is at the same time assigned. On the cause of the anomalies of refraction, on the contrary, the dioptric condition laid down does not throw any light; they are defined simply as disturbances of connexion in the relative position of principal focus and retina. Here it will be better, however, only to sketch what is the rule,

going into particulars when treating of each of the anomalies in detail. The rule is expressed in the adjoining figures. Fig. 4 is an emmetropic, Fig. 5 a myopic, and Fig. 6 an hypermetropic eye.
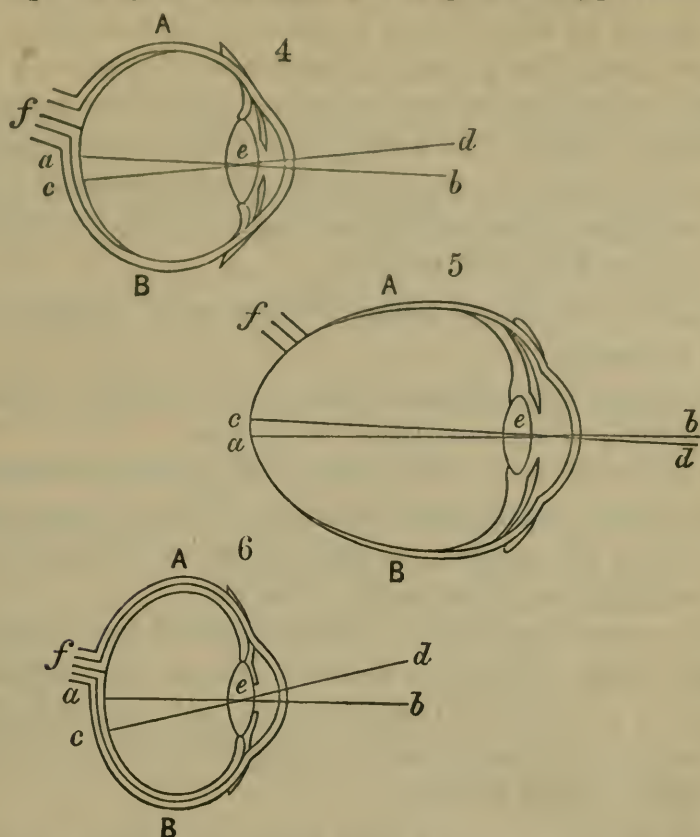
On looking at them it is evident that in the myopic eye the axis of vision (*c, d*) is longer, while in the hypermetropic eye it is shorter, than in the emmetropic; and to this it is almost exclusively to be attributed that parallel incident rays in the myopic eye come to a focus in front of, in the hypermetropic eye behind, the retina. Myopia and hypermetropia have been supposed to be dependent on other causes, such as the cornea being convex in the one and flattened in the other, or on modifications in the lens; but the final result of the examination of all such theories leaves it pretty certain that myopia *usually depends upon an elongation, and hypermetropia* upon a shortening, of the axis of vision.

The ophthalmic surgeon should make it a rule to determine the refractive condition of the eyes of all his patients. Of course in acute inflammations it is quite allowable to defer this determination in the first instance; but when the inflammation passes away it ought not even in such cases to be neglected. After a little practice this determination is effected with both rapidity and certainty, and it

may be done either—1, by testing the power of vision with glasses of a known focal length; or 2, by determining the refractive condition by means of the ophthalmoscope. The first is the simplest and most certain, and for its employment we need, in the first place, the necessary glasses from $\frac{1}{80}$ to $\frac{1}{2}$ (convex), and from $-\frac{1}{80}$ to $-\frac{1}{2}$ (concave); and, in the second place, the necessary objects for testing.[a] The most suitable objects for testing are letters and numbers. Dr. Snellen, of Utrecht, has drawn up these on a regular system, and has thus supplied a want which has long been felt.[b] The principles kept in view by Dr. Snellen are:—

1. Detached, separate letters, black on a white ground, in irregular sequences.

2. The letter, large Roman, square, the vertical strokes being $\frac{1}{4}$, the horizontal $\frac{1}{8}$ of the breadth of the letter.

3. Exclusion of some letters more difficult to read than others.

4. Ascending magnitudes from I to CC, the magnitude being proportional to the number, so that CC is two hundred times larger than I; and XX ten times larger than II.

5. The several magnitudes distinguishable by a sharp eye, in good light, at the distance of so many feet as the number amounts to. Thus II at 2 feet, VI at 6 feet, &c., all seen at similar angles (of 5 minutes), are equally easily distinguishable by the eye exactly accommodated to the distance.

Great advantages are obtained by the application of these principles. In the first place, the existence of ametropia is at once apparent, when, with respect to the power of distinguishing, the proportion between distance and magnitude is destroyed; for example, if a person sees I at one foot, II at two feet, and cannot see XX at twenty feet distance, *myopia* exists. Then, again, we can immediately, with perfect accuracy, determine the sharpness of sight. He who, having his eyes properly accommodated, distinguishes XX only at ten feet instead of at twenty, has a sharpness of vision (S) $= \frac{10}{20} = \frac{1}{2}$, when he sees C at twenty feet, then $S = \frac{20}{100} = \frac{1}{5}$, and so on. It will be important here to give some

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[a] Boxes, with the necessary positive and negative glasses, spectacle frame, prismatic and coloured glasses, &c., can be had from Messrs. Smith, Beck, and Beck, 31, Cornhill, London.

[b] To be had at Messrs. Williams and Norgate, 14, Henrietta-street, Covent-garden, London.

general indications on this subject; for this purpose we give in detail the following most useful clinical lecture of Professor Donders, reserving minuter details for another opportunity :—

"A PERSON AGED TWENTY PRESENTS HIMSELF.

"The question is :—does ametropia exist? *We give him small print—* I to IV of Snellen's test-types *to read.*

"A. *He reads* I *without difficulty at a distance of from* 6 *to* 12 *inches;* II at the distance of 2 feet. We in the first place infer, that his power of vision is sharp, secondly, that he is either emmetropic or at least but slightly ametropic. We show him XX at 20 feet. He reads that likewise. Is he then emmetropic? is still the question.

"1. *With* $-\dfrac{1}{40}$ *he does not see* XX *at the distance stated, better defined ;* he is not myopic. *With* $\dfrac{1}{40}$ *he sees the letter fainter, less black,* although *somewhat larger :* he has no *manifest* hypermetropia. May he, nevertheless, be hypermetropic? *Latent* hypermetropia might exist, which, so long as accommodation is active, cannot appear. This may manifest itself only after the instillation of sulphate of atropia (gr. i to dr. ii), paralysing the accommodation; if it exists, the eye should now see much more sharply at a distance with $\dfrac{1}{40}$, perhaps even with $\dfrac{1}{24}$ or $\dfrac{1}{16}$.

"Must we then, in order to satisfy ourselves of the existence or non-existence of latent hypermetropia, in each of our patients, paralyse the power of accommodation by means of atropia? By no means; this ought to be done only when there is reason to suspect hypermetropia, and even then we should warn the patient, that, for some days, impairment of vision, particularly for near objects, with dimness, and probably with intolerance of light, will remain. When, therefore, are we justified in assuming or suspecting in a youthful individual the existence of latent hypermetropia? We may assume it when manifest hypermetropia exists; a portion is then always latent through the action of accommodation. We may with great probability suspect it : 1, when convergent strabismus is present ; 2, when there are complaints of asthenopia ; 3, when P is much too great for the time of life. If, for example, the person examined at the age of 20 years says he cannot read accurately at the distance of 6″,[a] we shall in 19 cases out of 20 detect latent hypermetropia. As shall hereafter appear, it may then become desirable to give him glasses.

"2. *If with* $-\dfrac{1}{40}$ *he sees more accurately at a distance,* he is very slightly myopic.

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[a] ″, inches ; H, hypermetropia ; Pr, presbyopia ; Hm, manifest H ; M, myopia.

" 3. *If with* $\frac{1}{40}$ *he sees as accurately as without glasses*, there is manifest hypermetropia.　Let us take glasses of higher power: $\frac{1}{36}$, $\frac{1}{30}$, etc.　So long as he continues to see equally well, the manifest hypermetropia is not corrected.　The highest glasses, with which he sees accurately, indicate the degree.　If he still sees accurately with $\frac{1}{24}$, his manifest hypermetropia is $= \frac{1}{24}$.　In this case we should also determine the total hypermetropia (manifest + latent), after paralysis with atropia.

" B. *He reads* I *best at* 6″, No. II *at* 9″, *both, indeed, much nearer, but not farther off.　From* 6″ *and* 9″ *reading becomes somewhat more difficult.*　The dilemma is: either myopia or diminished sharpness of vision.　At 20 feet distance he does not see No. XX, nor XL, nor LX, which last are three times larger than XX.　Myopia almost certainly exists.　We try with $- \frac{1}{9}$.　Now he sees much more accurately and reads No. XXX or even XX at a distance of 20 feet: the myopia is proven.　Its degree is, however, not exactly known.　Why did we try glasses of $- \frac{1}{9}$?　Because the farthest point, at which tolerably acute vision still existed, lay at about 9″.　By attending to this, we come tolerably near the degree of M.　If he sees with $- \frac{1}{9}$, the parallel rays acquire a direction, as if they came from a point situated 9″ in front of the glass.　By comparison with glasses of $- \frac{1}{8}$ it appears, that with the latter he sees still more accurately; with $- \frac{1}{7}$ not better than with $- \frac{1}{8}$, with $\frac{1}{10}$ decidedly less accurately.　M therefore exists $= \frac{1}{8}$.

" C. *He cannot, or at least can only with difficulty, read* No. I (*or even larger letters*), *at whatever distance the book be held.*　His time of life excludes presbyopia.　But three cases are still possible: there exists either diminished accuracy of vision, or H, or paresis of accommodation.　Where the pupil is freely movable, with normal diameter, the latter is almost with certainty excluded.　The shortest way is, however, immediately to make him read with $\frac{1}{10}$.　Spectacles with these glasses should always lie on the oculist's table.　It is in very many cases the first number which he tries in order to arrive quickly at a conclusion.　If with $\frac{1}{10}$ No. I be read at 12 inches, even at 16″ I$^\text{r}$ (= $1\frac{1}{2}$ be read: we can no longer suspect diminished accuracy of vision, and H has become

very probable. At the distance of 20 feet XL is distinguished, also XXX, but XX, on the contrary, is not. But with $\frac{1}{30}$ the patient sees them more accurately ; with $\frac{1}{20}$ he distinguishes XX, with $\frac{1}{16}$ he still sees them as well; with $\frac{1}{13}$ the letters begin to be diffused : the existence of H and indeed of $\mathrm{H} = \frac{1}{16}$ is thus established : S is at the same time perfect.

If positive glasses produce a considerable improvement, but if none can be found, with which XX is distinguishable at 20 feet, H is complicated with diminished sharpness of vision, as often is the case. In either instance, the total H should now, by the artificial production of paralysis, be determined. Had paresis of accommodation existed, without H, the naked eye should have seen accurately at a distance, and even weak positive glasses should have diminished the accuracy of vision with respect to remote objects. The condition would have been immediately distinguishable from H from the fact, that with $\frac{1}{10}$ at more than $10''$ the letters would have become somewhat diffuse, and consequently $\mathrm{I^I}$ could not have been read at $16''$. Where complication with diminished accuracy of vision exists, examination of the media and of the fundus oculi with the ophthalmoscope is necessary. In H this investigation is frequently negative, although the accuracy of vision is diminished. Not unfrequently astigmatism is at the same time present, the consideration of which I must defer to a subsequent chapter.

" D. *The patient reads* II, *or at least* IV *and* VI *at* $3''$, $4''$, *or* $5''$ *from the eye, but not at a greater distance.* Here either myopia with diminished accuracy of vision, or a high degree of hypermetropia exists. If he reads No. VIII at 2 feet, it can scarcely be anything else than hypermetropia. If at a distance he sees only LX, with glasses of $\frac{1}{6}$, No. XXX with those of $\frac{1}{5}$ less well, it is hypermetropia, and indeed $\mathrm{H}m = \frac{1}{6}$; a portion is still latent. Had myopia existed, with greatly diminished accuracy of vision, the patient would have seen worse at two feet distance, and, what is decisive, the vision of remote objects would have diminished with positive glasses; with negative, on the contrary, it would have increased.

" E. *He says he can see quite well and accurately, particularly at a distance, but that his vision is also good for near objects. But the eye soon becomes tired ; close work he cannot keep up.* This is asthenopia, to be treated of, in detail, in a separate chapter. Here I may just observe, that in the great majority of cases H is the ultimate cause of it. We should try whether the patient can read at $6''$, $5''$, and $4''$; whether it is difficult or not.

We cause him to look to a distance: weak positive glasses of $\frac{1}{40}$, $\frac{1}{36}$, etc., improve or at least do not diminish the accuracy of vision. Thus the presence of H is demonstrated, and it now remains only to determine its increase by artificial paralysis (the latent H). But sometimes, notwithstanding the existence of asthenopia, the letters at a distance are rendered somewhat diffused by weak positive glasses, for example of $\frac{1}{40}$. Can we thence infer the absence of H? By no means, it is almost certain that latent H exists. We must, therefore, in such cases determine P, and afterwards have recourse to artificial paralysis of accommodation. Should it thus appear that no H exists, $\frac{1}{A} = \frac{1}{P} - \frac{1}{R}$ will be found particularly small, and we thus come to the question of paresis of accommodation, which is infinitely rarer than H.

"All these cases hang upon the determination of R. With it the existence or non-existence, and at the same time the degree of ametropia are given. Moreover, we could in the simple manner already described determine the nearest point; with it the range of accommodation $\frac{1}{A} = \frac{1}{P} - \frac{1}{R}$ is known. With the increase of years it diminishes and vision is consequently considerably modified. Therefore it was necessary in the foregoing examples to suppose a definite time of life, and we chose a young man of 20 years. It will be advantageous to bring forward some persons of more advanced age.

"A MAN AGED FIFTY PRESENTS HIMSELF.

"A. In good light he easily recognises No. II at 20, and even at 24 inches, No. I^I doubtfully at either distance, No. I not at all. At the distance of 16 feet he recognises the letters of XX. The accuracy of vision is therefore practically perfect. With $\frac{1}{40}$ he sees less accurately at a distance, but near objects with much greater ease. Our conclusion is: there exists only Pr, and for close work he had already been obliged to use spectacles.

"B. *He cannot read without spectacles. Even ten years ago he began to experience difficulty at his work. At a distance, however, he then saw accurately, but now he sees less sharply: No. XX he does not recognise, at the distance of 20 feet, No. XXX doubtfully, and the letters are not black.* We may be nearly certain, that in this case Pr has been superadded to H. With $\frac{1}{10}$ he reads No. I at about 12″, closer with great difficulty: the accuracy of vision is perfect; the existence of H has, properly speaking, been already proved by seeing at 12″ with glasses of $\frac{1}{10}$. Let us determine it by looking at a

distance; with $\frac{1}{30}$ vision is acute as well as with $\frac{1}{40}$, with $\frac{1}{24}$ it is less good. H exists $= \frac{1}{30}$. At fifty years of age the latent H is very trifling; we need not determine it. Glasses of $\frac{1}{30}$ may be constantly worn by this patient; for reading and writing something stronger is required.

"C. 'He has always had excellent sight, saw distant and remote objects exceedingly well, boasts conceitedly of his eyes, but has for some weeks observed that he no longer sees at a distance as accurately with the right eye.' *He reads* I *from* 6″ *to* 12″, No. II *at* 2, *but not* No. III *at* 3 *feet distance.* We infer nearsightedness. The patient denies it; is surprised that he cannot recognise Nos. XX and XXX at a distance, and still more that he accurately distinguishes them with glasses of $- \frac{1}{30}$. The eye with which he could still read, but could see less accurately at a distance, appeared to be affected with a trace of cataract.

We have given these examples in detail, as they point out the mode of looking for ametropia. When considering the Special Part we will refer to them again.

The refractive condition of the eyes may also be determined by the ophthalmoscope; but generally speaking this method is inferior in accuracy to the previous method, because, among other things, it is often difficult for the observer to relax his own power of accommodation; because we are never perfectly sure, without producing paralysis of accommodation, that we determine the refraction in the condition of rest; and because it is sometimes difficult—when strongly negative glasses are required—with a narrow pupil to see accurately the vessels of the retina. Still, however, there are cases in which the former method cannot be employed, and in which this latter one is of great importance, such as in very young children, in the high degrees of amblyopia, and in cases of simulated ametropia.

Chapter III. treats of the fuller development of the different meanings of range of accommodation. These will be more fully alluded to when the different forms of ametropia pass under review.

Chapter IV. is on Spectacles and their Action in General. In ophthalmic surgery different kinds of spectacles are in use.

I. *Protecting Spectacles.*—*a*, those for keeping off dust, &c., but which, having nothing to do with the refraction of light in the eye, need not be alluded to further here; *b*, those for warding off light. These consist mostly of coloured glass, especially blue; in general,

however, at least in daylight, the grey, or so-called neutral glasses, are to be preferred. In wearing such glasses care should be taken that the whole field of vision be uniformly obscured, as the light falling in from the side has a doubly unpleasant action when coloured glasses are applied in front of the eye, for the lateral parts are then seen by contrast in the complementary colour of the glasses, and in the remaining part of the field of vision the complementary colour appears still stronger as a secondary image so soon as the spectacles are taken off.

II. *Stenopœic Spectacles.*—Slight obscurations of the light-refracting media, especially those of the cornea, often produce great disturbance of the accuracy of vision, and this on account of the diffusion of the light passing through them. Where such obscurations exist the exclusion of the peripheric light with the hand, looking through a tube, &c., increases the accuracy of the images. The practical rule to be deduced from such facts is that, in order, where obscurations exist, to distinguish with relative accuracy, the small portion of the field of vision over which the obscuration is to extend must be properly illuminated, and the remaining portion must be kept as dark as possible; hence the use of the stenopœic spectacles. They can be easily manufactured by making an ordinary spectacle glass opaque over the obscured part; for example, by applying some gold size. Such glasses have not only proved of benefit in cases of obscurations in the cornea, but also in some cases of very high degrees of myopia.

III. *Prismatic Glasses.*—What led to trying prismatic glasses was a declination of the visual lines. On experimenting with these glasses—

"Three remarkable phenomena immediately presented themselves. In the first place it appeared, that one feels involuntarily impelled, by changing the direction of the visual lines, to remove the double vision which has taken place. If we hold the glass with the refracting angle inwards, then, in order to bring the double images into one, stronger convergence is required, and this is immediately almost involuntarily effected. On removing the glass, double images again exhibit themselves, which, by diminishing the convergence, are once more forthwith thrown together; only, if the prism has been long held before the eye, a tendency to increased convergence continues for some time. In the second place it seemed, that the visual lines are usually capable of only very slight divergence, and that they can scarcely decline upwards and downwards, even under the pressure of the necessity of rendering the vision single.

In general the prism, when the refracting angle is turned to the outside of the eye, ought to be very weak, in order to allow the observer still to see remote objects single; and the same weak prism, when the refracting angle is turned upwards or downwards, produces double images, which cannot be overcome. If, finally, the observer has, after long-continued efforts, succeeded in throwing into one the double images standing (in the last case) above one another, the double images which now arise on removing the prism, do not immediately run together again. Thirdly, and lastly, we can convince ourselves of what has been stated above, that under the influence of a prism with the angle turned towards the inside or outside, the observer can converge more or less strongly, without being able to alter the tension of his accommodation.

"These results, obtained with the aid of prismatic glasses, are of essential importance for the physiology, and for many points in the pathology of the eye. But beyond this, these glasses serve different useful purposes in ophthalmic surgery, which, partly previously foreseen, have been, especially by von Graefe, practically tested. Thus they may be applied in the diagnosis of different anomalies of the muscles, and of the degree of these anomalies. Thus they may be used to correct slight incurable declinations of the visual lines, outwards, upwards, or downwards, whereby confusing double images are produced, or to remove the muscular asthenopia, depending on insufficient power of the musculi recti interni. Thus we may further, in paresis of a muscle, so far meet the disease by means of a prism, that in order to make the double images which have been brought near one another, run together, the muscles will become powerfully tense, which, for the alleviation of the paresis, appears to be no matter of indifference. Finally, what deserves to be here particularly mentioned, these glasses are also of importance in anomalies of refraction. They show, that hypermetropic individuals distinguish accurately with greater ease, when they, looking through a prism with the angle turned inwards, for the sake of single vision, can converge more strongly, a fact by which the origin of strabismus, in consequence of hypermetropia, is explained; and it will hereafter appear that we sometimes advantageously apply the principle of the prismatic glasses, by modifying the mutual distance of either the convex or concave glasses of spectacles, so that the eyes look through these glasses *at the side* of the axes, which, just like the use of a prismatic glass, modifies the direction in which an object is seen."

IV. *Glasses with Spherical Surfaces.*—Glasses which modify the limits of distinct vision are called lenses; of these there are two kinds, both of which are used as spectacle glasses—converging and diverging lenses. Of these biconvex and biconcave glasses, ground

with equal radii of the two surfaces, are found to answer best; the optical centre of such lenses lies, then, in the middle of the lens, in its short axis, and the distance from the focus to this optical centre is usually called the focal distance F. The power of such a lens is inversely proportional to its focal distance, which may be expressed by $\dfrac{1}{F}$ for converging, and by $-\dfrac{1}{F}$ for diverging lenses. The value of F is expressed in Parisian inches, so that glasses of $\frac{1}{6}$, of $-\frac{1}{8}$, &c., are, therefore, glasses of 6 inches positive, of 8 inches negative focal distance. When such glasses are held before the eye they are to be considered as an integral constituent of the dioptric system of the organ. The immediate consequences of placing a glass with a positive and negative focus before the eye are—1, the greatest and least distances of distinct vision (P and R) undergo a modification; 2, the range of accommodation is altered; 3, the region of accommodation changes in position and extent; 4, the magnitude of the retinal images does not continue the same; 5, the determination of the distance, magnitude, and form of the objects undergoes a change; and 6, stereoscopic vision with the eyes suffers some modification. All these consequences are investigated and explained at length; but we have dwelt so long on some of the previous chapters that we are reluctantly compelled to conclude this notice without alluding to these investigations, or to those as to whether the axis of the glasses should coincide with the visual axis. In our next number we propose to return to this subject, and to analyze the important chapters on Emmetropia and Hypermetropia.

Lectures on Public Health, Delivered at the Royal College of Surgeons (Ireland). By E. D. MAPOTHER, M.D., Professor of Hygiene; Medical Officer of Health, City of Dublin; and Surgeon to St. Vincent's Hospital. Illustrated by 20 Woodcuts. Dublin: Fannin & Co., 41, Grafton-st. London: Hardwick, Piccadilly. 1864. Pp. 276.

THE subject of public health has of late years occupied much of the attention of the more intelligent portion of the community. Recent legislative enactments, reports presented to both Houses of Parliament, annual reports of medical officers of health of cities, even the reports of the Ladies' Sanitary Association, show how large a

share of public attention is now given to this important subject. It is we conceive a matter concerning which the profession of medicine may be justly proud—the earnestness with which its members lend their aid, on every occasion, to further the cause of preventive medicine, and lessen the evils arising from preventible disease. In this respect no impartial observer can doubt that the medical contrasts very favourably with other professions, which often-times are found to resist reforms, admitted to be for the public good, on no other grounds than that such reforms are calculated to injure the profession in a pecuniary point of view; although without doubt, an efficiently carried out system of preventive medicine, would, even in this city, greatly lessen the remunerative labour of medical practitioners, yet we find that the Royal College of Surgeons, taking no interested or selfish view of the matter, has established a professorship for the purpose of diffusing knowledge regarding public health and the prevention of disease; and we also find that the Corporation of Dublin, adapting itself to the advancing spirit of the time, has nominated a medical officer of health for the city.

The author of the lectures before us is the individual who has been selected by both these bodies to exercise the important functions of Professor of Hygiene and Medical Officer of Health. When we say that we believe that in selecting Dr. E. D. Mapother they have been happy in their choice, we do not mean to express ourselves in the ordinary terms of mere conventional compliment, we feel justified in stating our conviction that Dr. Mapother's antecedents prove him to be a person not only of ability to perfom, but who will carefully and conscientiously carry out the important scheme entrusted to him.

The work before us consists of twelve lectures; the first half are devoted to air, water, and food; the rest to less general topics. When we consider that the time at the author's disposal, from the moment of his appointment as Professor of Hygiene, until he was called upon to deliver these lectures was very limited, we must pardon some shortcomings; but, on the whole the lectures are clear and well expressed, hitting off with precision that degree of the popular style which it is desirable to introduce; of the difficulty of doing this Professor Mapother was himself aware, for he speaks thus:—

"This science, as I understand it, is an application of the laws of

physiology and general pathology to the maintenance of the health and life of communities by means of those agencies which are in common and constant use. It is, therefore, a department which the medical profession can share advantageously with the public, who, indeed, through the medium of Social Science Associations, Parliamentary Commissions, and similar organs of inquiry, are advancing rapidly in sanitary knowledge. The audience which I have the honour to address in this and succeeding lectures being composed of both lay and professional persons, I feel the peculiar difficulties which arise from such a circumstance, for I fear that in endeavouring to elucidate many facts, unfamiliar to the former I shall be reciting what my medical brethren must regard as obvious corollaries from data already in their possession. It seems to me that I shall most readily secure your attention upon the present occasion, and convince the sceptical, if such there be, of the importance of sanitary instruction and organization among the general public, by sketching, though very briefly, the evils which both in ancient and modern times have ensued from neglect of all wholesome precautions, and the benefits which a diffusion of sanitary knowledge has conferred on mankind."

We can assure our readers that these lectures make a volume over which some very agreeable as well as profitable hours may be spent; it contains much information, and is at once instructive and very entertaining.

De L'Opium dans La Pratique Obstetricale. Par M. Le Docteur Bribosia. Bruxelles: H. Manceaux. 1864. 4to, pp. 232.

In the year 1862, it seems, the Royal Belgian Academy of Medicine proposed, for the subject of a prize essay, the use of opium, as deduced from clinical facts, in pregnancy, abortion, labour, and the puerperal state. To M. Bribosia was awarded the prize (which consisted of a gold medal of the value of six hundred francs), and his essay is the one now before us. The manifold uses of opium in midwifery practice have been very fully tested by British accoucheurs—far more so, indeed, than by our continental brethren; and to this fact M. Bribosia bears most ample and willing testimony.

The plan of reviewing in detail the various actions and uses of a medicine, the different circumstances under which it may be advantageously exhibited, and the effects it will probably produce,

according to the stage or time at which it is given, is well calculated to yield useful results; for by a careful comparison of these particulars we are enabled to correct our impressions; and may hope to discover the fundamental principles which should guide us in its employment.

So far back as the year 1849 the uses of opium in midwifery was made the subject of a lengthened communication to the Dublin Obstetric Society, by Dr. M'Clintock. This was, perhaps, the first attempt to bring together and to describe in a detailed systematic manner the various obstetric properties and uses of the drug. The essay before us must be regarded as a very copious *résumé* of the whole extent of our knowledge upon this important subject. The writer appears to have carefully consulted nearly all the German, French, and English authors, who have recorded any facts bearing upon it; and the mass of information thus obtained, together with the results of his own experience and reflection, have been reduced to order, and distributed under proper heads, so as to place the whole before us in a connected and methodical way. Our author shows all that punctilious regard for divisions and sub-divisions, parts, chapters, sections, sub-sections, &c., which constitutes so prominent a feature of most French treatises; nevertheless, we are bound to say, his arrangement of the subject is simple, and comparatively free from those artificial distinctions which often tend only to confuse and incumber, being but a device to fill up space, under the specious pretence of greater minuteness and accuracy. M. Bribosia's essay is divided into four parts. In the first of these the *modus operandi* of opium is made the subject of inquiry. Of the matters discussed in these chapters, it is only necessary for us to notice what the author's own opinion is respecting the intimate action of opium on the animal economy. As this is a much debated point, yet one of deep interest and great practical importance, we give the observations of the author in full:—

"We have seen that the elective place of action of opium was the nervous system; we have said that it tended to paralyze, to suspend its functions. Here is the notion that we entertain of the manner in which it affects the nervous tissue. In speaking of its effects upon the great sympathetic, we have mentioned the phenomena observed to follow the section of this nerve, in the cervical region especially; division of the cervical filament, among others, produced elevation of the temperature of the same side, contraction of the pupils, augmentation in the pressure of the blood, cerebral hyperemia; many of these symptoms which seem

to result from excitation, are due, however, to paralysis of the divided nervous filaments. It is an analogous action that we would seek to attribute to opium, not only upon the cervical filament of the sympathetic, and the entire sympathetic itself, but upon the entire cerebro-rachidian and ganglionic nervous apparatus. We find, in short, in the section of the sympathetic in the neck, most of the symptoms of poisoning by opium. The result of it evidently is paralysis of the nervous filaments superior to the division, and of the parts to which they are distributed. May we not fairly conclude that a substance which would produce the same effects possesses, an analogous, mode of action—a paralyzing and destructive property?

"Similar conclusions may be deduced from this similarity in the results; the division of certain sympathetic branches which are distributed to glands, has arrested their secretion, and we know that opium has the remarkable property of arresting all the secretions.

"The action exercised upon the cerebro-spinal nervous system would be of the same kind.

"We believe the opinion just expressed best explains the greater part of the facts observed, the experiments upon animals, the observations on the human subject in health and disease, and puts them in harmony with recent discoveries in physiology. Obstetric practice perfectly accords with this. The double action of opium would easily explain, in starting from this point, how that the *stimulating effect* proceeds from the paralyzing action exercised upon the branches of the great sympathetic, those, among others, which accompany the cerebral vessels, a paralysis which entails augmentation in the pressure of the blood, cerebral hyperemia, and elevation of the temperature of the body. As for the *narcotic effect*, it would be the result, more slowly produced, of the destructive action of opium upon the nervous centres, and especially upon the brain."

Without stopping to inquire into the merits of this theory—which certainly accounts for some of the effects of opium on the system—we pass on to the other and more practical portions of the work. Part II. treats of the uses of opium during the gravid state; and is divided into seven chapters, in which will be found directions for the employment of opium for the relief of the various symptoms and diseases incident to pregnancy. Here, as in other parts of his treatise, he places before us the opinions of all the most eminent authorities upon the subject. British practitioners, more than any others, are familiar with the uses of opium in obstetric practice, and the chapters before us do not contain anything worthy of comment and quotation. The last chapter in this division is a

curious one, however. It relates to the use of this medicine in helping us to diagnose the existence of pregnancy. During gestation, he tells us the system is unusually tolerant of this drug, so, profiting by this peculiarity, he ventures, with Professor Van Hueval, and Dr. Hyernaux, of Brussels, to recommend its administration in moderate, but frequently-repeated doses, for the purpose of observing how soon its narcotic effect is produced. Our own observation does not confirm this opinion of the system being in any remarkable degree less susceptible to the action of opium during gestation than at other times; and therefore we attach little or no value to this supposed use of the medicine; and at best, it could only give a tinge of probability. At the same time if it be true that the system is more tolerant of opium in the pregnant state than at other times, the fact is worth remembering, as it should have an influence upon us in regulating the strength of the dose should opium be required for any purpose in the course of pregnancy.

The use of opiates in the progress of parturition forms the subject of the *third part* of the treatise. The different groups of cases here described amount to *seventeen.* Some of these are simple and well marked, but others are of a kind that hardly admit of distinct clinical recognition, though easily enough defined on paper. For example, in his third, fourth, fifth, ninth, and twelfth groups (on anomalous pains, spasms of the neck of womb, false pains, rigidity of the os uteri, and rheumatism of the uterus), the morbid conditions which the opium is designed to remove seldom exist alone, and when in combination their relative amount of influence upon the progress of the labour cannot possibly be determined. We think, too, the author has not sufficiently kept in view the important bearing which the stage of labour, and whether the membranes be ruptured or entire, will have on the effect of the opium. These constitute essential elements in weighing the advisability of giving the medicine, and in estimating its probable effect.

He bears ample testimony to the unequalled utility of opium in averting threatened premature labour: and to British practitioners he gives the fullest credit for this valuable application of the drug. The employment of opiates in cases of this description has been strongly advocated in France by M. Paul Dubois and M. Charrier. From cases reported by these and other writers, it would seem that we have it in our power, by means of opium, to arrest the

process of parturition, even after it has fairly set in and made considerable progress. Nay, it would seem not impossible for labour to be indefinitely postponed by the use (or more correctly, perhaps, the *abuse*) of opium. In his second memoir on *Missed Labour* (published in the seventy-fourth number of this Journal) Dr. M'Clintock has published a case confirmatory of this statement.

The author speaks in very favourable terms of the good effects of opium in the treatment of many cases of puerperal convulsions, whether occurring before or during parturition. We entirely agree with him in thinking that it should be included in our list of remedies for this disease, though it is scarcely, if at all, admissible in cases of well marked sthenic eclampsia, with symptoms of general plethora and great cerebral congestion. Here opium should only be tried subsequently to free depletion. The author's opinion on this subject is supported by that of Dr. Duncan, Scanzoni, and Franque, from whose writings he freely quotes.

The fourth and last part of M. Bribosia's treatise has reference to the employment of opium subsequently to the birth of the child. Burns and some others have ventured to recommend its administration for the hemorrhage so often occurring at this period, and depending on inertia of the uterus. Our author, however, entirely, and very properly, as we believe, disapproves of this practice, considering it to be alike opposed by theory and experience. But when the vital powers have become greatly reduced from an excessive loss of blood, and when some powerful remedy is required to sustain them, then, and for this purpose, he looks upon opium as a " marvellous " remedy. His language on this subject is in strict accordance with the practice of Dublin accoucheurs, and he enforces his remarks by ample quotations from the writings of Dr. Beatty and Dr. M'Clintock. In cases of extreme collapse, from the effect of hemorrhage, the sustaining power of opium exceeds that of any other remedy, and therefore it should take precedence of all other remedies in these trying emergencies. The practical point most difficult to be determined is, *whether the opium may safely be given before the flooding has been suppressed*. Our own rule on this point—and it coincides essentially with that laid down by M. Bribosia—is, not to give opium at the outset of the hemorrhage, nor as long as it is going on, *unless symptoms of alarming prostration show themselves*, when we may resort to it, as Professor Murphy has shown, with every expectation of seeing benefit to result from its stimulating effect on the nervous system.

The author goes through the different diseases of childbed, and points out very fully what beneficial effects may be expected from the use of opium in the treatment of each. His remarks are everywhere sound and judicious, and afford abundant evidence of careful research and mature reflection. He enters very fully into the consideration of the opium treatment of rupture of the uterus, and, after citing many cases of recovery, chiefly from British writers, he concludes by expressing his conviction in the most positive manner, that this plan should constitute the basis of our treatment of this terrible complication of labour. In the after-treatment of the Cesarian section also he claims for opium a no less important place, asserting that he is justified by experience as well as by theory, in regarding its administration as of the highest utility.

In studying the uses of opium in the treatment of puerperal fever, our author allows himself to be carried away much beyond the proper limits of his subject, and is so discursive that his remarks extend over nearly forty pages. We were greatly astonished at finding no mention of the names or writings of two men—Gooch and Alonzo Clarke—who, above all others, have extolled opium as a specific in certain forms of puerperal fever. This is a great omission, and surprises us the more from the length of his chapter and the extensive research he has everywhere displayed throughout his essay.

In closing this short notice of M. Bribosia's essay, we must express the general satisfaction which its perusal has afforded us. The author has very closely adhered to the condition of the prize, which required that the essay should be based on clinical facts, and this feature imparts to the work the highest value. Throughout its pages he has carefully abstained from dogmatizing and from making unsupported assertions. Another feature in the work, and which must strongly commend it to English readers, is the freedom with which he quotes British authors, and the high position he accords to them as authorities upon the subject of his essay. We think he would have enhanced the utility of his treatise had he been particular in pointing out the occasional injurious effects of opium, and how to obviate them. But perhaps this did not strictly come within the scope of his undertaking.

Scritti Medici Editi ed Inediti di FRANCESCO CASORATI, raccolti
  e pubblicati per cura dei suoi figli. Vol. I. Trattato delle
  Febbri Intermittenti. Pavia e Milano, 1863. Pp. 387. 8vo.

The Edited and Inedited Medical Works of FRANCIS CASORATI,
  Collected and Published by his Sons. Vol. I. A Treatise
  on Intermittent Fevers, with Biographical Notices. Pavia and
  Milan, pp. 387, 8vo, 1863.

FRANCESCO CASORATI, of whom so little, if anything, is known in
these islands, must have been a very able man, for we find that
great surgeon and physiologist, Scarpa, selecting him from among
a host of competitors, and translating him from a distant provincial
dispensary to the chair of medicine in the University of Pavia, so
long ago as in 1827, when Casorati was only thirty-four years of
age.

The volume before us, though one of a series to come, forms in
itself a complete work devoted to the consideration of intermittent
fevers, for the study of which the author was particularly well
circumstanced, as the vast rice fields in the neighbourhood of Pavia
constitute a prolific source of paludal poison in every variety of
form. Casorati, however, does not attribute to paludal miasma
all the blame in the causation of intermittent fevers, which he
believes to depend just as often on suppressed cutaneous perspiration,
the result of sudden changes of temperature, without any paludal
infection; and at p. 8 he quotes Faure (*des Fièvres Interm.*, Paris,
1833), who gives an account of an intermittent epidemic which
affected a body of troops stationed in the Pyrenees, at an altitude
of 4,800 feet above the level of the sea, which were not exposed
to damp nor to paludal miasma of any kind, but who were subjected
to great and sudden changes of temperature. A great part of the
author's book is taken up by the examination of the diagnostic
differences which serve to establish the distinction between real
intermittent, quotidian, tertian, or quartan, and the spurious forms
of fever, and those characterized by some internal organic lesion;
this differential diagnosis must be of great importance in countries
where intermittents are so common as in the rice districts of Italy,
especially when it is taken into consideration that Casorati enume-
rates a great number of diseases, all of which are capable of pro-
ducing intermittent fever. As to the treatment adopted—bleeding

and leeching, even in cases of pregnant women—we would rather withhold our judgment; from our experience of blood-letting, we would certainly be very averse to adopt it, but we are quite willing to admit that climate and temperament make vast differences in the exigencies of treatment, for even in this country the ordinary fevers we meet with every day may require a very different treatment in different seasons.

Casorati admits the value of cinchona in ague; but, strange to say, he considers that the treatment of intermittents has become more empirical since its introduction; he does not, however, give any account of his own views of the therapeutic action of bark, death having overtaken him in his work before he had completed it. Francesco Casorati, whom we now take leave of, was evidently a man of talent, and who by studying the physiological and pathological phenomena of ague, sought to inaugurate a more rational treatment of this disorder than that in vogue in Italy in his day. He was well qualified for his task, and he was evidently an earnest man, but still one cannot help feeling that he has left the treatment of ague precisely where he found it.

RECENT OPHTHALMIC LITERATURE.

1. *Entoptics, with its Uses in Physiology and Medicine.* By JAMES JAGO, M.D., Oxon. London: J. Churchill and Sons. 1864.

2. *Manual of Instructions for the Guidance of Army Surgeons in Testing the Range and Quality of Vision of Recruits, and in Distinguishing the Causes of Defective Vision in Soldiers.* By Deputy Inspector-General LONGMORE. London: Her Majesty's Stationery Office. 1864.

3. *On Long, Short, and Weak Sight, and their Treatment by the Scientific Use of Spectacles.* By J. SOELBERG WELLS, M.D. 2nd Edition. London: J. Churchill and Sons. 1864.

4. *On the Pathogeny of Strabismus.* By Professor DONDERS, of Utrecht. Translated from the German, with a Preface, by E. PERCEVAL WRIGHT, M.D., F.R.C.S.I. Dublin: Hodges, Smith, and Co. 1864.

DR. JAGO became acquainted with entoptical research after the following manner:—About the year 1841, being still, as regards

medicine, in *statu pupillari*, he, while testing some physiological fancy—suggested to him in the course of his reading—pressed strongly on his eyeballs, and a few days afterwards he became aware, for the first time, that his eyes were inhabited by muscæ volitantes. Alarmed at this, he consulted an eminent oculist; this distinguished man, whilst cheering him with the assurance that they might prove innocuous, enjoined a temporary abstinence from books, lest the muscæ should perchance turn out to be premonitory of amaurosis. Being shut out from reading, he had no refuge but in thinking, and so commenced examining the muscæ with a punctured card, and inviting his acquaintances to search their eyes in the same way; he then soon convinced himself that such muscæ are the common lot of mankind, and since then he has never neglected an opportunity of collecting evidence upon this subject; the final result has been the little work which we are now reviewing.

The volume consists of an introduction and six chapters, treating respectively on entoptical methods; apparitions from eye-lashes, eye-lids, and conjunctival fluids; iris and crystalline lens viewed entoptically; the structure of the vitreous body determined entoptically; the retina viewed entoptically; and an appendix on visual sentients.

The introduction and the chapter on entoptical methods are cleverly written, one could hardly desire better or clearer directions on the subject; we felt, however, an inclination to smile, on reading the description of the human eye in the third paragraph, " covered with a lubricating fluid, over which glide protective shields," and to wonder what idea an ordinary non-professional reader would carry away with him on its perusal. There is nothing that strikes us as very original in Dr. Jago's method of research; although, as we will see by-and-by, there are some new and original conclusions which he bases upon his observations. The following chapters on the apparitions from eyelashes, eyelids, &c., &c., are well illustrated with figures exhibiting the chief phenomena observed. Many interesting phenomena are here for the first time described and figured. The author's description of the structure of the vitreous is interesting. " From the walls of the cavity behind the crystalline lens, as far as it is lined by hyaloid membrane (this membrane being supposed not to line the capsule of the lens), there springs into view a lax network of beaded fibre, which is the frame of an invisible membrane that divides the peripheric portion of the

vitreous into a certain number of little chambers, separating them from each other, and from a larger middle one. These compartments are filled with fluids of graduated density, in such order that the densest lies next the capsule of the lens and the rarest next the retina; so that the vitreous body is, in all probability, a compound optical instrument, whose anterior constituents excel the posterior in refractive power." For a verification of this statement we must refer the reader to the work itself. Every one will agree with the author, "that in retaining the term *muscæ volitantes* in the vocabulary of symptoms, it is of great moment that we should be at once able to discriminate between pathological and physiological ones. In times past, many images, which were but an accident of the essential structure of all human eyes, have oftener been called by this name than images of morbid products in the eye, or morbid impressions upon some portion of the nervous system.

It was a wish to know more of these *muscæ volitantes* that first originated the entoptical method of exploring the eye; and Dechales, a Jesuit of the seventeenth century, appears to have been the first to have described them.

In the Bibliographical record, as given by Dr. Jago, but scant justice is, we think, done to older writers on this subject. The author proves his own priority as to the publication of certain phenomena, and vindicates his rights with no little acerbity. But as priority is only a matter of dates, it behoved him not to resort to guesses and suppositions as long as the former could be obtained; thus we think the following line of argument most decidedly in bad taste:—" Helmholtz, out of a long list of authors quoted, marks but two—Listing and Doncans, as consulted by himself. Listings' contribution could not have been published before July, 1845, and then it was, in all probability, later than Mackenzie's paper, published in July, 1845; but Mackenzie, in the fourth edition of *Diseases of the Eye*, registers an essay of mine, published on May 9th and 16th of this year, which possibly might have been the incentive to his publishing his own remarks on the same subject matter in July, 1845." An argument of this kind is very unfair; and though we feel assured that Dr. Jago has laboured on the subject of entoptics for many years, and thoroughly understands it, yet we think the attempt to make out that every important step in this subject is owing to his researches, and that every modern writer on the subject either took their notions from him,

or else have written what turns out to be more or less erroneous, is one unworthy of his attainments. We do not wish in our brief notice of this work to allude to the printed letter of Dr. Mackenzie on this subject, further than to state that we feel sorry that Dr. Jago should have so far forgotten himself as to accuse Dr. Mackenzie, even in the remotest degree, of misquotation, misrepresentation, or bad faith—charges which, we need hardly add, Dr. Mackenzie most abundantly disproves. In leaving this subject, we may mention that though we have more frequently met with cases of muscæ volitantes in the eyes of myopic people, yet several of the worst cases that we have seen appeared in eyes either perfectly emmetropic or very slightly presbyopic.

The discovery of the ophthalmoscope has taken away any practical benefit that might be derived from the studies of entoptics, but it has very far from destroyed the interest in this mode of research that will always be felt by the physiologist. The concluding chapters of this work, on the retina and on visual sentients, are proofs of this. While therefore we blame Dr. Jago for the manner in which he has treated his cotemporaries, we feel indebted to him for publishing a very useful, and, minus the points above alluded to, a very complete book on this subject.

The Manual of Instructions, by Deputy Inspector-General Longmore, is published by the wish of the Director-General of the Army Medical Department. We have read it through with much pleasure, and hope every medical officer will make himself acquainted with its contents. We venture, however, to remind the army surgeon that since this little manual was published, both Professor Donder's work on the accommodation and refraction of the eye, and Zander's work on the ophthalmoscope, have been translated into English; and we strongly advise their adding these books to their shelves, if with the addition of Liebreich's *Atlas*, so much the better. We would advise them too, to read Mr. J. Hogg's work on the ophthalmoscope *before* buying it. Perhaps also it may interest some of our readers to know that in the last edition of Dr. Snellen's *Test-types* they will find a set of test-dots, in addition to the types; these dots are of the same dimensions as those issued from the War Department. By a recent circular, it has been ordered that no men shall be received into the service who are unable to see distinctly a black centre three feet in diameter on a white ground, up to six hundred yards at least.

This most useful little manual is divided into two parts; first, that of the optical, and second, that of the ophthalmoscopic examination of the eye. On the first portion we have no comment to make, the directions laid down are clear and distinct. We would advise the surgeon, unless he happens to be very expert with the ophthalmoscope, to decide the amount of myopia or hypermetropia present by means of the proper glasses and test-types, as being by far more satisfactory than using the ophthalmoscope for this purpose.

In reference to the second part. If the army surgeons are supplied with Liebreich's simple ophthalmoscope, we advise them to use it; but if they have a choice in the matter, we would strongly recommend them to buy that of Coccius' in its stead. As to the flame, there need now-a-days be no difficulty, for no flame can be better or steadier than that from a common paraffine lamp; it is by no means always necessary to dilate the pupil with atropine in order to examine the eye. After the first glare of light has played steadily for a minute or so on the eye, the pupil will generally dilate sufficiently of itself; but if not, a solution of atropine of one grain to the ounce of water will be quite strong enough to induce mydriasis. We mention this the more especially for Mr. Longmore states that the objection to using atropine has been removed since the discovery of the Calabar bean, but this is by no means the case; the effect of the solution of the Calabar bean is very transient; and when it passes away, the mydriasis returns as before. It is better, too, to apply the atropine to the eye in solution, as the application of the paper often causes some irritation. In concluding this short notice, we feel justified in stating that this is not only one of the very best manuals that have been published in this country, but that it is one which will be useful not alone to the army surgeon but to every one who is ever called upon to examine a human eye, and we wish all our medical practitioners would buy and read it.

J. Soelberg Wells on Long, Short, and Weak Sight, and their Treatment by the Scientific Use of Spectacles.—On a former occasion we gave our readers a very careful review of the first edition of this work, and recommended them to study it, as an easy book on a subject of every-day interest, and one on which medical men often give very bad advice, namely—the choice of spectacles. We pointed out some errors, but these have been corrected in this new edition, which is of a much more convenient size than the first.

It is needless to review the book again in detail. We therefore pass over the first seven chapters with the remark that much new and useful matter has been introduced.

The eighth chapter is new, entitled " Astigmatism." For this, we have no doubt, we are indebted to the labours of Dr. Moore, of this city, who has translated the great and valuable work of Donders, for the New Sydenham Society, an analytical review of which we give in this number.

Mr. Wells has given a short and lucid account of this subject in a few pages. He says—" We have seen that the anomalies of refraction resolve themselves into two, viz., myopia and hypermetropia." " In myopia the rays are united before the retina;" " in hypermetropia they are united behind the retina." " But we find that the state of refraction may even vary in the different meridians of the same eye; thus, in the vertical meridian it may be normal, but in the horizontal myopic or hypermetropic." " This asymetry has been termed astigmatism (α priv and $\sigma\tau\acute{\iota}\gamma\mu\alpha$, a point,) which signifies that rays emanating from one point are not re-united into one point." " Donders showed that this asymetry was not as formerly to be looked upon as an interesting phenomenon of rare occurrence, but that it was frequently met with, and that many cases of congenital amblyopia, which were before deemed incurable, were dependent upon it, and could be alleviated or cured by the use of the proper cylindrical glasses."

Mr. Wells has given us a very pleasant book to read, which is, as he calls it, " as complete a synopsis as possible " of the views of others. We hope that at some future time we may receive, from the ophthalmic surgeon, and lecturer on ophthalmic surgery at the Middlesex Hospital, something very good of his own.

On the Pathogeny of Squint, by Professor Donders, of Utrecht; translated from the German, with a preface, by E. Perceval Wright, M.D., &c. The last ophthalmic book on our list is a very good translation of a short work of Professor Donders *On the Pathogeny of Strabismus*. Our space does not admit of a lengthened notice; but though we treat of it shortly, we strongly recommend our readers to study it carefully.

There is much, not only in the work itself, but also in the preface, that will interest and be of use to the general practitioner as well as to the oculist. It will teach him when to advise an operation, and not blindly to dissuade parents from having the

operation performed when their child is young, or encourage them to put it off until vision is destroyed and an operation rendered useless. We have ourselves heard practitioners consulted on this subject, and heard the advice given not to have the operation performed until the individual was old enough to think of his or her personal appearance.

This is not the object of operating for strabismus, it is to save and preserve the functions of almost the most important organ of the body.

It is curious the apathy that exists with regard to this subject; a child is allowed to grow up, month after month, year after year, under the observation of many medical men, and gradually go blind, without the slightest effort being made to save it. The book before us is just the book for the busy practitioner—it is short, clear, and well written.

Elements of Materia Medica; containing the Chemistry and Natural History of Drugs; their Effects, Doses, and Adulterations; with Observations on all the New Remedies recently Introduced into Practice; and on the Preparations of the British Pharmacopœia. By Dr. William Frazer, Lecturer on Materia Medica to the Carmichael School of Medicine, &c., &c. Second Edition, 8vo., pp. 441. London: Churchill and Sons. Dublin: Fannin & Co. 1864.

The first edition of this book was published in 1851; since which time Dr. Frazer has been deservedly held in well-earned repute as an authority on the Materia Medica. That edition was chiefly intended for the student; and such of Dr. Frazer's pupils as have had the benefit of his book, as well as of his private and more detailed teachings, can testify that to a large extent his object in its publication has been attained.

Among practitioners it was not held in the same degree of estimation; but in the present edition we find that usefulness to the practitioner is the first object aimed at, while the student's advantage is by no means forgotten.

While the general arrangement of the book remains as before, Dr. Frazer states that the present edition has been entirely re-written. That this is so the most superficial observer may see by a glance at random at any part of the new, as compared with the corresponding

part of the old edition; and we are bound in all candour to say
that the re-writing has very much improved the volume. The
present arrangement consists of:—1. Chemical Materia Medica; 2.
Vegetable Materia Medica; 3. Animal Materia Medica; 4. Sup-
plementary List of Non-officinal Medicines; and 5. A Posological
Table, followed by an Index. *In limine*, the question arises—
What is the best mode of arrangement for a work of this kind?
The therapeutical arrangement has advantages, but it has grievous
disadvantages also; because under it a drug is divided into various
parts or properties, so to speak, and is thus really divided into
different medicinal entities, whose very existence, or the extent or
character of whose existence, is, and must be, a fruitful source of
controversy.

On the other hand, the natural arrangement, while apparently
superior to the former, because it possesses certain advantages, is
yet open to practical objections: such as, that there are many
botanical orders which contain but one medicinal plant each; others
contain but few; others contain plants having different properties;
while others, again, contain noxious and harmless members of the
therapeutical family. Nor are the chemical formulæ which are said
to designate the exact composition and relationship of some inorganic
substances either generally agreed upon or by any means infallible.

It seems to us that, in the present state of knowledge, the best
arrangement for a book of this kind would be one constructed ac-
cording to the arrangement of the three parts of the *Pharmacopœia*
by a well-digested process of " fiat mistura:" to give a drug, tell
all about it, and give all the preparations, officinal and non-officinal,
having a relation to it.

Throughout this volume we observe that Dr. Frazer has retained
most of the symbols of the *Dublin Pharmacopœia*. No doubt he
has done this from conviction of their practical usefulness; but we
put it to him, whether a writer and teacher of repute should thus
throw an obstacle in the way of *students*, in setting before them
what is now, in law, a dead language? We are fully persuaded of
the strength of the objections urged against that portion of the
British Pharmacopœia which has abolished the old symbols, and
leaves no course open to rigorously exact prescribers save to write
as the law now provides; except, indeed, in this country, where it
seems an express statute still exists obliging all prescriptions to
have the drugs, quantities, and directions, written at full length,
and not by symbols or abbreviations. The reader will find a reference

to this matter in a recent essay in the number of this Journal for August, 1864.[a]

Dr. Frazer's method of description may be instanced from this extract (p. 18):—

"TINCTURA IODI—TINCTURE OF IODINE.—Is of deep brown colour, staining the skin, used to paint over tumours to promote their absorption, or added to liniments for scrofulous affections, &c.; it may also be given internally in doses of ten drops, gradually increased to thirty, properly diluted.

" PREPARATION.—Iodine, $\mathfrak{z}$ ss.; iodide of potassium, $\frac{1}{4}$ ounce; rectified spirit, O j.—Mix."

The chemistry of the work may be thus instanced (p. 31):—

"SODÆ ACETAS—ACETATE OF SODA (NaO, $C_4H_3O_3 + 6HO$).—Is obtained in white foliated masses or oblique rhombic crystals, which effloresce in dry air, losing one-third in weight; it should react neutral, and tastes saline and slightly bitter; is soluble in three parts of cold, or one of boiling water, and at red heat becomes changed into carbon and carbonate of potash."

The following comparative view may be given of the first and second editions:—

1851.

" *Ferri Sulphas Siccatum, D. Ferri.*
" *Sulphas Exsiccatum, E. Dried.*
" *Sulphate of Iron.*
" *Preparation.*—D. Expose granulated sulphate of iron to an oven heat not exceeding 400°, until aqueous vapours cease to escape; then finely powder it, and keep in stoppered bottles.

" E. Moderately heat sulphate of iron in a porcelain or earthenware vessel, not glazed with lead, till converted into a dry greyish white mass, and powder it.

" The crystals lose by drying six atoms of water, retaining the seventh atom until decomposed; hence, gr. iij. are equal to nearly gr. v. of crystallized sulphate.

" DOSE.—Gr. ss. to gr. iij.

1864.

" FERRI SULPHAS EXSICCATA— DRIED SULPHATE OF IRON (FeO, $SO_3 + HO$).—The sulphate when dried loses six atoms of water, retaining the seventh atom until heated to 500°; a red heat decomposes the salt. It is a yellowish white powder, useful for making pills; three grains being equivalent to five of the crystals.

" DOSE.—Half a grain to three grains, thrice daily.

" PREPARATION. — Expose sulphate of iron, $\mathfrak{z}$ iv., in a porcelain capsule, to a moderate heat, which may be finally raised to 400°, until aqueous vapours cease to be given off; finally powder the residue, and preserve in a stoppered bottle."

[a] Brief Considerations Respecting the Weights and Measures, and the Nomenclature of the Pharmacopœia. By T. W. Belcher, M.D., &c.

The reader who may have the first edition, can compare for himself several other portions of both volumes ; for example, strychnia, p. 293, second edition, with the same drug on p. 380 of first edition. In the second edition he will find information as to the experiments of Dr. Marshall Hall and the Rev. Professor Haughton ;[a] while the formula for strychnia is given as C_{42}, H_{22}, N_3, O_4, instead of C_{42}, H_{23}, O_4, N_2, the formula in the first edition. In the edition of 1851 the composition of muriate of morphia is described as Mor. $HCl + 6Aq.$; whereas, in 1864, Dr. Frazer describes the composition of the same drug as $C_{34}H_{19}NO_6$, $HCl + 6HO$. At p. 164 of the new edition, Dr. Frazer supplies an obvious want by giving an explanation of the pharmacopœial process of volumetric analysis, which, so far as the labours of the Medical Council went, bid fair to be as perfectly sealed a mystery to the student or ordinary practitioner as the writings of Avicenna in the original Arabic. This portion of the work is illustrated with engravings of a Burette, of a Pipette, and of Mohl's apparatus for performing volumetric analysis.

The Animal Materia Medica part, in 1851, contained but nine articles, with the preparations made from them ; while in 1864 we find fifteen articles, with numerous preparations made from them ; and such of these preparations as were given in 1851 are better described, and much more information is detailed concerning them, in the present than in the former edition.

The list of non-officinal medicines is not as ample as we should have expected. Not to make a long list, we may just instance the absence of any mention of various preparations of quinia which are in more or less frequent use, and for information respecting which the busy practitioner would naturally look to this volume. We look in vain for the citrate, muriate, antimoniate, arseniate, nitrate, phosphate, tannate, and valerianate of quinia. The valerianate has long been in occasional use, and many practitioners would use the arseniate if they could learn something about its properties and effects.

The posological table is such as we should expect from Dr. Frazer, and is well suited for practical men who do not wish to meddle with the edged tools of the *British Pharmacopœia* without well knowing what they are about. In our opinion, it is free from the various strong objections which have been urged against some

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[a] On the use of Nicotine in Tetanus, and Cases of Poisoning by Strychnia. By Rev. Samuel Haughton, M.A., F.T.C.D. Published in this Journal in August, 1862.

works published shortly after the appearance of that much-abused volume, the *British Pharmacopœia*, which, judging from its long course of preparation and enormous cost, an alchemist of old might fancy to contain mysterious revelations about the elixir of life and the philosopher's stone.

We do not commend Dr. Frazer's book as infallible (he himself would not do that), but we do recommend it to the profession and to the student, for whom it has been designed. The reader will learn by consulting it; and the student, by inwardly digesting its teachings, and remembering them, will not fail to pass a good examination in materia medica.

Photographs (Coloured from Life) of the Diseases of the Skin. By Alex. Balmanno Squire, M.B., London, &c. London: John Churchill and Sons. Number I.

Neither the advertisement, nor the descriptive sheet of letter-press accompanying this plate, states when it was published; but we perceive it is intended to form the first of a series, to be issued at short intervals.

The photograph before us is marked " Class I.—Squamæ, Psoriasis (Diffusa); " and in so far as any photograph, even when coloured by an artist, can be held to represent life, it is a fair specimen of a strongly marked typical case of that disease. It so frequently happens that the first number of a series of plates proves to be the best, that at present we cannot, of course, give any opinion as to the probable value of the entire collection; this first plate, however, we have no hesitation in saying, is beautifully executed.

Medical Education in the University of Dublin; a Discourse, Delivered at the Opening of the School of Physic in Ireland— Session 1864–65. By William Stokes, LL.D., F.R.S.; Regius Professor of Physic in the University of Dublin. Dublin: Printed at the University Press by M. H. Gill. 1864.

In the thirty-fourth volume of this Journal (November, 1862) the subject of medical education was fully reviewed, in connexion with several publications which had then just appeared. Among these were " pronouncements" on this important question from Doctors

Stokes and Laycock, whose views were, to a certain extent, antagonistic, while both were argued with singular ability.

Under these circumstances it will not be necessary to re-open a discussion on the education question; and, while we shall give to the discourse of Dr. Stokes that prominence and attention which the author and his subject alike demand, we shall, in an extract or two, allow him to speak for himself. At page 5, he thus writes:—" But you are not to understand that I advocate the idea of an absolute uniformity in education or instruction. Such a state of things might not be desirable, even if it were possible; but great principles can be adopted although the details of their working may vary according to many circumstances—such as those of time, place, opportunity, usage, the character of teachers, the nature of institutions, and so on. These principles may shortly be stated to be— first, that the aim of all education should be, not so much the accumulation of knowledge as the preparing of the mind in the best way for its reception.

" Next—That in all cases the larger the mental culture of the student the greater will be his aptitude for receiving, advancing, or using any branch of special instruction or applied knowledge."

Dr. Stokes proceeds to discuss the social position of Medicine, as compared with the Church and the Bar; and, deploring the present state of things, asks:—" Is not the true cause of the grievance that, by long custom, and for their own ends, the medical corporations, and that class of universities which, by ignoring the value of an education in arts to the medical student, are really little more than faculties, have confounded instruction with education—have placed the special training as first in importance, often to the total neglect of that enlarged education which would enable their members to advance the real interests and support the true rank of a liberal and a learned profession? . . . . . Let us see how medicine stands in these respects as to its sister professions. If we look to the history of medicine, and at all that its followers have done for the scientific and moral advancement of the world, we shall find among physicians, as evidenced by their labours and example, a greater number of instances of the result of large views, of genius, of success in scientific discovery, and of a noble philanthropy, than in either divinity or law, But, on the other hand, looking at the members of the three professions collectively, we must admit that in the latter education is more equally distributed. The result is only what might have been anticipated. Just as in a democracy,

in which the masses give the character to the whole, medicine, in the public eye, is judged by the attainments and character of its masses; and if, for one man whose mental powers have been well cultivated, whose tastes and whose manners are refined, who has the ambition and the power to advance his science, there are many who stand in another category, who can wonder that the medical practitioner, though he may be a deserving, conscientious, and laborious man, is so often unworthily treated?"

Dr. Stokes further states that in the *Medical Register* for 1864 there are upwards of 18,000 names; out of which 541, or 3 per cent. only, are of those holding degrees in arts from Oxford, Cambridge, and Dublin.[a] While he admits the great value of the Scottish and some other universities, he considers them rather as *faculties* than as *universities;* and informs us that the great end of the present system of medical education in the University of Dublin is to place "the students and graduates in medicine, in their academical relations, on a perfect equality with those of the other faculties."

He also considers the present system of lecturing *ad nauseam* excessive, and states that it "constitutes really a great evil."

We beg to refer our readers to the former review on this subject, particularly with regard to the views there propounded as to the difference between "grinding" and "cramming," and as to the real value of a "lecture" in the present day. In former times the hebdomadal sermon was the only means of instructing rustic parishioners in knowledge of almost any or every kind. Now, if it be not better than what one can read in a book, it is thought very little about. Even so with medical lectures in these days of illustrated text-books. Except as demonstrative or very original discourses, they are useless, too often absolutely injurious; and this we say from a long and painful experience of them. In the daily newspapers we have lately had long, and to some extent acrimonious, discussions on the conduct of a certain bishop admitting "literates," that is, *unlearned persons*, to holy orders. This question, to some extent, applies to ourselves. We want a high, but a generally attainable standard of education, to enable our profession, in the persons of its masses, to take a high social position in the country.

[a] From Churchill's Medical Directory for 1858, it appears that of 10,279 practitioners in England, 397 returned themselves as having degrees in medicine, implying degrees in arts, and 16 others returned degrees in arts—in all, 4·10 per cent. In Scotland, 59 state they have degrees in arts, or 3·4 per cent. In Ireland, 341 state they have degrees in arts, or 17·12 per cent.—[ED. Dub. Quar. Jour.]

The Training of Idiotic and Feeble-minded Children. By CHEYNE
   BRADY, Esq., M.R.I.A. Dublin: Hodges and Smith. 1864.
   Pamphlet.

WE have on several occasions alluded, in the pages of this Journal,
to the asylums established in England, and elsewhere, for the
reception and education of idiotic children. The contemplation of
the improvements that have been effected by these institutions in
the condition—physical and moral—of idiotic and feeble-minded
children cannot fail to raise feelings of admiration and thankfulness
in the minds of all. It affords us great pleasure now to learn, from
a notice on the cover of the pamphlet before us, that a movement
is about to be made to found one of these asylums in this country;
and we hope, by explaining the results that have been attained,
and the manner in which the education of these classes is carried
on, to enlist the assistance of our profession in the movement,
believing that medical men could serve the cause more efficiently
than any others. It is intended to call a meeting to consider what
steps should be taken to found one of these institutions for Ireland;
and, in the meantime, all who feel interested in the subject, are
requested to communicate with Mr. Jonathan Pim, or Mr. Brady,
the author of this pamphlet. In April last these gentlemen, along
with Mr. Wharton, Surgeon to the Meath Hospital, visited the
asylums that have been established in England and Scotland; and
the account of what they saw and heard is now published by Mr.
Brady to direct attention to the movement.

The first educational experiments in idiocy were made by a
distinguished member of our profession, Itard, in Paris, in the
beginning of the present century, on an idiot known as the " Savage
of Aveyron," with whom the philosophers of the period were at
first greatly delighted, thinking that in him they had found the
statue of Condillac, an animated machine, of which it was only
necessary to touch the springs to call forth the operations of the
intellect. But disgust soon replaced the enthusiasm, and the
unfortunate " Savage of Aveyron " was abandoned, till Itard took
him as a pupil, and devoted all his energies for five years—though
unsuccessfully—to his training. Stimulated by Itard's example,
and assisted and guided by Esquirol, M. Séguin has devoted
himself to the task of training idiots; and, though not a physician,
his writings on their hygiene and training have done much to

establish correct principles for the treatment of this class of sufferers. But it is to M. Voisin, one of the physicians of the Bicêtre, that the honour seems chiefly, if not wholly, due of having attracted attention to the various characters of idiots with a view to cultivating the fragmentary faculties existing in them. His work, *De l'Idiotie chez les Enfants*, abounds with remarks calculated to rescue the most infirm minds from neglect, and to encourage culture before giving up to despair. The other physicians to the Bicêtre confirmed the teachings of M. Voisin; and, in 1828, M. Ferrus, chief physician to the hospital, organized a school for idiots, causing them to be taught habits of order and industry, and to be instructed in reading, writing, arithmetic, and gymnastic exercises. At the Salpêtrière M. Falret established a school for idiotic females in 1831; and, nine years later, MM. Voisin and Leuret, as physicians to the Bicêtre, organized a system of education and instruction on a greater scale; and thus the way was prepared for the systematic efforts afterwards made at the Bicêtre by M. Séguin.

In Switzerland another attempt was being made at about the same period. Here, also, a member of our profession, Dr. Guggenbühl, was the originator of the scheme. Called one day to examine a case of malignant disease, in one of the beautiful valleys of the higher Alps, his attention was attracted by seeing an old *cretin*, one of the class of idiots that so abound in these valleys, attempting to pray. The sight, as he says, at once " fixed his vocation." " These stricken individuals of our race," said he, " these brethren, beaten down, are they not more worthy of our efforts than those races of animals which men strive to bring to perfection? It is not in vain formulas, but in charitable efforts, that we must find that divine love which Jesus Christ has taught us." He immediately went to work, fixed upon a mountain in the Oberland, called the Abendberg, issued appeals for subscriptions, and soon received sufficient funds for the support of twenty children, to whose moral and physical development he consecrated all his efforts.

In Great Britain—though Dr. Poole, of Aberdeen, had advocated the expediency of subjecting idiotic children to medical treatment and educational training in an article on Education which appeared in the *Encyclopedia Edinensis* in 1819, and was subsequently published separately—it was not till 1846 that any practical effort was made. The first attempt was made by the Misses White, who, in that year, opened a small asylum at Bath for four pupils. In 1848 the number reached fifteen, and now it accommodates as many as twenty-four.

Another lady, Mrs. Plumbe, soon afterwards originated a new movement, out of which the magnificent national asylum of Earlswood, and others, have grown. She enlisted the sympathy of her minister, the late Dr. Andrew Reed, of Hackney, a well-known philanthropist. A committee was organized, and an old mansion at Highgate, called Park House, large enough to accommodate seventy-five pupils, was procured, and opened as an asylum in 1848. Mr. Brady gives the following description of their early proceeding:—

"In the first week the committee admitted twenty-seven children, partly by election and partly upon payment, and a motley group they must have presented. Some had defective sight, most had defective or no utterance, many were lame in limb or muscle, and all were of a weak and perverted mind. Many had been spoiled, others neglected, and not a few ill used. Some were clamorous and rebellious, some sullen and perverse, and some unconscious and inert. Several were screaming at the top of their voice, others making constant and involuntary noises from nervous irritation, and a few, terrified at scorn and ill-treatment, hid themselves in a corner from the face of man, as from the face of an enemy. Windows were smashed, wainscoting broken, boundaries defied, and the spirit of mischief and disobedience prevailed. It seemed as though nothing less than a prison would meet the wants of such a family. Many who witnessed the scene retired from it in disgust, and others in despair.

"Nevertheless the experiment was successful. In their report of 1850, the managers were enabled to write thus:—

"'It is their privilege to speak of efforts partially realized, and in some instances of a marked and delightful character. It has been their happiness to observe the eye that had no useful sight begin to see; the ear to relish sweet sounds; the tongue that was dumb to articulate the language of men; and the limb that was crippled or inert put forth to useful and active service. Bad habits have been overcome; power has been created for the care of the person; the body has been brought under the control of the will, and both have become subject to a mild authority. The power of imitation has been fostered; music and drawing are beginning to find a place in the school; reading, writing, and even figures, which are the severest test to the weak mind, are now claiming general attention: and, above all, the moral affections have been exercised, and the effects are found in the harmony of the family, and the greater readiness of the mind to recognize and worship an invisible and gracious Presence. There is now order, obedience to authority, classification, improvement, and cheerful occupation. Every hour has its duties, and these duties are steadily fulfilled. Windows are now safe, boundaries

are observed without walls, and doors are safe without locks   The desire now is not to get away, but to stay. They are essentially a happy family. And all this is secured without the aid of correction or coercion. The principle which rules in the house is love, charity, Divine charity.'"

In 1850 the committee obtained, on extremely liberal terms, from Sir S. Morton Peto, a large house, near Colchester, called Essex Hall, to which two other houses were added, enabling them to accommodate 195 pupils; and, soon afterwards procuring the estate of Earlswood, determined to build an institution where they could have all their pupils in one establishment, and have proper facilities for classifying, educating, and training them. The foundation stone of this building was laid by Prince Albert in July, 1853, and in 1855 he presided at the opening of the asylum, which is capable of accommodating 400 pupils. Essex Hall was re-opened subsequently as a local institution for the Eastern Counties; and the Western Counties are at present building an asylum for themselves, under the auspices of the Earl of Devon, which will shortly be opened, and will be fitted to receive twenty-one pupils. Mr. Brady has copied a portion of a recent report, by Mr. Millard, the Superintendent of the Eastern Counties Asylum, from which we make the following extracts:—

"After the cases have been received from the July election, 1864, there will be niney-nine pupils in the Eastern Counties Asylum ; about one-third upon payment, and the remainder by the votes of subscribers. The health of the children has been, on the whole, remarkably good. By the contributions of a few friends many of the pupils are favoured with an annual excursion to Walton-on-the-Naze, and the capable pupils are treated every year with a trip to the Crystal Palace. Live animals are kept as a source of enjoyment for the patients, and various modes of amusement are provided. During the Summer cricketing is much enjoyed, and in the Winter musical performances, magic lantern entertainments, and suitable readings, are carried on with beneficial effect. The pupils are taught the manufacture of cocoa-nut fibre matting, tailoring, gardening, and household work. Dr. Duncan's drill and speaking lessons are used with advantage, and the school exercises are adapted to the feeble capacities of the pupils. . . . . . . A young man who was useless at home, prone to violence when provoked, and who, when he first came, was thought to be insane, has been trained to habits of industry and good behaviour. At the end of two years he was allowed to see his friends, and whilst at home the clergyman wrote the following satisfactory letter :— ' We all rejoice to see William very much improved. I cannot give him

too high a character so far as his conduct here is concerned. William worked nine hours a day for the last four days by his father's side, and we hope that when he returns home he will be able to earn his living.' The youth continues to make progress, and, though likely to be able to earn his livelihood, he will need the guidance of his friends as to spending it. Yet, how great the boon conferred in the family by placing him at Essex Hall! He came idle and passionate, he has become industrious and well-behaved; and, instead of being a burden and hindrance to his parents, he will return to be a help, and to assist materially in earning money for their maintenance."

In Scotland the first practical efforts for the imbecile were made by Sir John and Lady Jane Ogilvy, who erected an asylum, at their own expense, on their estate at Baldovan, near Dundee. It was opened in 1854, and can receive forty pupils, who pay sums varying from £13 10s. per annum. None are admitted after thirteen years of age; the most improvable are preferred; and, as the low charges made for most of the pupils are insufficient to defray the expenses, the deficit is made up by voluntary subscription. At Larbert, near Falkirk, there is another institution, which owes its origin to the self-denying labours of Dr. and Mrs. Brodie. It was first opened in the year 1855, in Edinburgh, then removed to the suburbs; and, in 1861, the committee took ground at Larbert, and commenced to erect an institution capable of accommodating 200 children.

In America the duty of educating imbecile children has been more fully recognized than in any other country; and large State grants are made for the purpose. Dr. Howe, of Boston, the well-known instructor of Laura Bridgman, gratuitously superintends the school for Massachusetts. In the report of the Pennsylvania Hospital the following gratifying statement is made:—

"Ten children from rebellious states, left on their hands without the ordinary remittances for their maintenance, have been retained and nurtured with the usual care; and in order that this should be done without embarrassment to other parts of the work, the physician, officers, and teachers, voluntarily and cheerfully agreed to suspend the payment of one-half of their salaries until the Southern claims could be collected, and to take the risk of their collection."

In Germany, Bavaria, Denmark, and Prussia, the care of the imbecile has likewise been recognized as a public duty.

In Ireland no provision whatever has been made for the instruc-

tion of improvable idiots; and, with the exception of Swift's Hospital for lunatics and idiots, no asylum has been opened for those who are hopelessly incurable. We trust this reproach to our humanity and charity will no longer be allowed to remain. It appears, from the Census returns last published, that in 1861 there were 7,033 idiots in this country, being 2,127 more than were returned at the Census of 1851. The proportion of idiots to the population was 1 in 825; and, of the 7,033 idiots, 5,675 were " either wanderers, mendicants, or under the care of their friends." How true, yet not more severe than deserved, is the reproach, " That even the dumb animal has been treated with more considera- tion: for we have, very properly, societies for the prevention of cruelty to animals; and the sentimental philanthropy of an eccentric lady has founded a refuge in London for the reception of wandering dogs."

We now turn to the methods of training the children for whom the institutions whose history we have been tracing are intended. In this portion of our subject we shall follow the descriptions of M. Séguin in his exhaustive treatise.[a] M. Séguin writes with all the eloquence and ardour of an enthusiast; but the task of educating such pupils is one that none but an enthusiast could accomplish; and he carries out his plans with such steadiness and judgment as to procure a very large amount of success.

The common opinion that idiots are incurable is, M. Séguin says, false; but their condition is greatly aggravated by neglect. All those cares, without which children well gifted could not have attained the dignity of manhood, are but too often withheld; they receive no kind forethought, no enlightened affection, no plan of education, no methodical treatment. The ignorant are condemned to ignorance, the inert to inertia, the idiot to perpetual idiocy; till, left to their instincts, their inertness, their nervous disorders, and filthy and repulsive habits, they become incurable, and, growing old prematurely, die at thirty. Yet idiots have been made good, active, intelligent, and, to a certain point, useful to their relatives and to society; and it is impossible to say, *à priori*, what cases are incurable. The trial must first be made. Neither the smallness of the head, nor the hydrocephalic enlargement, are signs on which any opinion as to the result can be formed. The most unpromising

[a] Traitement Moral Hygiene et Education des Idiots et des Autres Enfants Arriérés Paris: Baillière. 1846. A very full analysis of this work appeared in the British and Foreign Medical Review for July, 1847.

cases are those attended with general paralysis, or with hemiplegia, chorea, and epilepsy.   But it is only after the failure of assiduous means that even these cases can be pronounced incurable; for proper treatment often ameliorates or removes these complications, and thus benefits the disease.   M. Séguin affirms that the number of idiots incapable of profiting by his method of education is exceedingly small, and that he has not found more than two per cent. with whom the means he has used have not produced results more or less satisfactory.

Convinced that the due performance of the bodily functions is essential to the healthy action of the mind, M. Séguin attaches primary importance to hygienic treatment, and lays down rules for this, for the most part well considered.   The special education is intimately connected with the hygienic treatment, and ought to comprehend—1st, the active powers; 2nd, the intellect; 3rd, the will.   Of these the education of the active powers, including motion and sensation, ought to precede that of the intellect; which, in like manner, must precede that of the will; and, to be successful, the system must be commenced at a very early age.

The education of the active powers includes that of the muscles and the nervous system, and is to be carried out by gymnastic exercises—the object being, the exercise of force during a fixed time, rather than sudden or violent exertions, which might prove injurious to children with feeble spinal columns.   A table, a balance, a ladder, and dumb-bells only are required; and the child is made to pass, by gradual degrees, from exercises purely physical to physiological; or, to speak plainly, from exercises of muscular mobility to those of the senses.   The methods adopted by M. Séguin are founded on those described in the *Manuel de Gymnastique* of M. Amoros; but the balance—which is a bar of wood, with wooden knobs at each end, and weighted according to the strength of the child—is his own invention.   When the idiot cannot, or will not stand, or use his hands to support himself, he is placed on the ladder, and M. Séguin, holding him by his belt with one hand, with the other directs his feet to mount or descend.   When he does not hold the steps of the ladder he is allowed to drop into the arms of an attendant, and replaced on it.   If this do not suffice M. Séguin mounts on the front of the ladder, and places the child behind it, holding his hands in his own; then, disengaging the child's feet with one of his own, he holds him suspended from the upper steps, assisting him to hold it, as may be necessary.   Then he disengages

one of the hands, when the child instinctively seizes on a lower step, and thus, by a series of graduated exercises, he educates the powers of prehension, and stimulates the development of the muscles. As soon as the child begins to use his hands he is taught to feed himself, and to handle various objects, as stones, bricks, pickaxes, spades, barrows, &c.—these last being specially useful, because of the necessity of balancing them when using them. Some are so weak as to be unable to stand, and are placed sitting on a spring-board, on which they are moved up and down; some cannot even sit, and the exercises must be varied according to their wants. Defects of motion in three forms may have to be treated—1st, want of muscular power; 2nd, defective power of will; 3rd, defects of structure, as contractions and retractions.

Imitation holds an important place in all the acts of life, and may be made a valuable agent in the education of idiots. M. Séguin treats of it under two heads, personal and impersonal; the first applying to the individual's own acts and habits; the second, when it relates to his actions on outward things. Some children possess the faculty of personal imitation in an extraordinary degree; and, when this is not cultivated, it leads to habits of contortions and grimaces, and the movements become of a spasmodic character. Sometimes the gestures and expressions have nothing remarkable in themselves; but, by the frequency of their repetition and inappropriateness, reveal idiocy. Others are at times violent; and, by the movements of their features, especially their lips, and by their voice, imitate animals. This power of imitation can be put to most useful purposes, but to do so requires time and patience; the movements must be controlled, and others, diametrically opposite to them, provoked. The first step is to procure complete repose of the muscles, which must be done in diverse manners, but always by the double method of authority and imitation. M. Séguin details the case of a child, indomitably petulant, clambering like a cat, escaping like a monkey; he could not be kept still for three seconds. He put him in a chair and sat opposite to him, holding his feet and knees between his own; with one of his hands he fixed those of the child on his knees, and with the other he incessantly brought before him his movable face. They remained thus for *five weeks,* meal and bed times excepted, after which the child began to stand, and almost immovably.

When repose of the muscles has been obtained the next step is to commence exercises of imitation. The child is taught, by gesture

and word, to know the several parts of his body, and their uses, of which idiots are generally ignorant. Then he is taught which hand to use in eating, and so is led to perceive the difference between right and left, and is induced to copy the movements of his teacher in closing and opening the hands, moving the fingers, assuming attitudes, &c.—lessons which are most effectual in classes Impersonal imitation is the next stage; he is led to repeat the movements of his teacher, who places objects in common use in different positions. The teacher takes a plate, and places it on the table, telling the child to take another and do the same; and so on; bricks, squares, and triangles are made into various forms, and at last the child is made to draw lines with chalk on a black board.

The muscles having been brought into training, the next object is to exercise and educate the nervous system and the organs of the senses, which is indispensable to, and must precede, all attempts at the education of the intellect. The senses are to be educated in the following order:—Touch, sight, hearing, taste, and smell; that is the order in which they are awakened in the healthy child.

Touch is the first of all our senses, and that which gives the greatest certainty. Of all our senses it is that which is most neglected in education. With idiots it is often the most depraved. Some have the sense of touch, but no power of perception; others have neither the sense nor the perception. In the first case it is necessary to awake the consciousness; in the others the sensation itself must be provoked before the attention of the mind can be given to it. In the first case it is important to associate hearing and sight with touch; in the second the touch must be roused by energetic and varied shocks, by agents whose actions are opposite, such as heat and cold. The education of the senses of taste and smell must be accomplished on the same principle as that of touch. Hearing is seldom deficient; and almost all idiots take pleasure in music, and are able to appreciate it—many are strongly influenced by it. Energetic gay tunes affect them more than slow and grave ones, and instrumental music has more influence on them than vocal.

M. Séguin mentions several cases in which he was able to teach idiots to speak distinctly, though they had been able to pronounce simple sounds or syllables of two letters only; but his directions on this head do not admit of a sufficient condensation for the present article.

The sense of sight is that which requires the most methodical

training. The other senses can be acted on directly, and their appropriate stimuli brought into relation with their organs; but the situation, delicacy, and mobility of the eye render it inaccessible to all direct influence. Three modes may, however, be employed for this sense:—

· 1. Place the child in a dark room, where there may be made to appear a luminous point, on which something may be traced that will be agreeable to the child. This light ought to be moved about so as to fix and draw after it the hitherto wandering and vacant eye.

2. Throw the balance backwards and forwards, so that the energetic movements may attract the eye.

3. Place the child before you, and follow his wandering eye with a firm and obstinate look. The intelligent and animated eye follows the inactive eye, arrests it, fixes it, and then directs it. But this exercise, easy of description, is often very difficult to execute. The child struggles; your look seeks his, he avoids you; you follow, he again escapes; you wait, he closes his eyelids. For four months M. Séguin tried to fix the wandering eye of one child. The first time their eyes met the child uttered a great cry; the next day, instead of the child's passing his hand over him, as he had ordinarily done, to assure himself of his identity, he looked at him as something new. The next days he prolonged his looks, with intelligence; and the expressions of curiosity and astonishment ceasing, he looked and saw like all the rest of the world; and, by speaking to him when his sight was roused, he looked afterwards when spoken to, and thus his hearing was improved. When the eye has been fixed, lessons in colour, dimensions, configuration, arrangement, and order succeed, from which the progress to drawing is more easy; but still, patience and perseverance must be the rule. In one case it took a fortnight to teach a child to draw a straight line.

From drawing geometrical figures the idiot passes to forming letters; thus D is only a half circle resting on a vertical line, A two oblique lines united at their summits and divided by a horizontal line. The next proceeding is to learn the names of letters. A frame is constructed in which each letter of the alphabet is placed, painted on cards, to each of which a metal letter exactly corresponds. Two or three metal letters are placed before the child, and he is directed to place one at a time on the corresponding letter in the frame, the teacher naming them; subsequently a letter being shown

to him he is told to name it; if at first he were told to name it as well as place it he would be puzzled.   He thus connects a name with a figure and a figure with a name.   Letters being understood, syllables are to be mastered, or the relation between sound and many signs, and also the relation of many signs with many successive articulations.   Here the previous lessons assist him.   The idiot who has placed two bricks to form one figure is led to comprehend how two letters can form one sound.   To connect words with objects and ideas, card letters forming the word are placed on the object (bread, knife, &c.), then the object is given to the child that he may find its name among the several names placed before him.

The more truly intellectual processes are next taught, as memory, reasoning, provision, and forethought; and the education that has been attained is applied to the common actions of life—as decency, bodily habits, attitudes, walking, dressing, eating, the cultivation of tastes, and work.   Obedience is next taught, but for this no other means but words, gestures, and looks should be employed.   From subordinating the idiot's will to his own the master next induces or excites him to act for himself.   The favourable moment of transition must be watched and seized—it cannot be hastened.   It is infallibly indicated by two signs—usually simultaneous—the absence of all resistance to authority and some spontaneous wish for an active and intelligent occupation.   After the first spontaneous act of an intelligent kind the immediate imperative authority should be gradually discontinued, and the idiot should be induced and excited to obey, through the means of his tastes, preferences, ideas, and feelings.

Games hold a high place in the education of idiots; M. Séguin mixes with his pupils as their playfellow, though he imperceptibly directs their games.   A game is the most spontaneous act of infancy; it is more, it is the free and voluntary accomplishment of a bodily and mental function; an idiot who can play almost deserves another name.   The choice of games lies with the children, their variation and graduation with the master, who should take care that the game should not become a mere routine, but that there should be always something to learn—at first the games that please his taste, afterwards those most useful.   Thus, when there is inability to direct the eye, the bow and arrow; for difficulty in the motions of the hand, or involuntary contractions, the battledore; for unsteady gait, the wheelbarrow, &c.

The idiot has now arrived at that stage that he can execute all

voluntary movements, he can read and write; whatever his master energetically wills he can do; but he cannot act on persons or things by his own free will, he cannot spontaneously will. Before acting on persons he must begin on things, and as the prehension of food is one of the first voluntary acts, the master may begin to exercise the will with this:—The cloth is laid; you sit down, says M. Séguin, so does he; everything is in its place, but the middle of the table is empty; he remarks it, and you should not remark it before he does. He calls the servant; there is none. Where are the chops? he asks; you wait, he goes to find the dish. At first it is placed on the sideboard, where the aroma of roast meat attracts him, another day in the passage, then in the kitchen. The same with the bread and wine. Next the dish is there, but no plate, no fork, no spoon; he is compelled, in the same quiet way, to exert his own thought and seek them. Thus, if his health permit, a meal may last several hours; but the time is not mis-spent if he learns to think. At a later period he must have nothing for dinner that he has not ordered in the morning, or purchased himself beforehand In like manner he is obliged to think and make arrangements with regard to his clothes. To establish his relations with persons he is led to feel some want or wish that they can satisfy.

We have thus sketched the plans of educating idiots recommended by M. Séguin. In 1843 the Académie Royale des Sciences appointed a committee to report on them, consisting of MM. Serres, Flourens, and Pariset, who conclude their report by saying—" M. Séguin has then opened a new career to benevolence; he has given to hygiene, to medicine, to moral philosophy, *an example most worthy to be followed*." In 1842 the Conseil d'Administration des Hôpitaux reported in such terms on the success of his method that the Government placed increased facilities at his disposal for carrying them out. Before this Esquirol and Guersant testified that in eighteen months he taught an idiot " to use his senses to remember, to compare, to speak, to write, to count." In a report, presented in 1847 to the House of Representatives of Massachusetts by a commission appointed to inquire into the condition of idiots in the Commonwealth, and of which Dr. Howe, who educated Laura Bridgman, was the chairman, we find further evidence, in a letter from Mr. George Sumner, a gentleman of admirable qualifications as a discriminating observer, as well as a genuine philanthropist. The following extract gives a general summary of the results of his enquiries—results not hastily caught

up, but gathered as the fruit of prolonged and watchful atten-
tion :—

" During the past six months I have watched with eager interest
the progress which many young idiots have made, in Paris, under the
direction of M. Séguin, and, at the Bicêtre, under that of Messrs.
Voisin and Vallée; and have seen, with no less gratification than
astonishment, nearly one hundred fellow-beings who, but a short time
since, were shut out from all communion with mankind,—who were
objects of loathing and disgust,—many of whom rejected every
article of clothing,—others of whom, unable to stand erect, crouched
themselves in corners and gave signs of life only by piteous howls,—
others, in whom the faculty of speech had never been developed,—
and many, whose voracious and indiscriminate gluttony satisfied
itself with whatever they could lay hands upon—with the garbage
thrown to swine, or with their own excrements;—these unfortunate
beings—the rejected of humanity—I have seen properly clad,
standing erect, walking, speaking, eating in an orderly manner at
a common table, working quietly as carpenters and farmers; gain-
ing, by their own labour, the means of existence; storing their
awakened intelligence by reading one to another; exercising,
towards their teachers and among themselves, the generous feelings
of man's nature, and singing, in unison, songs of thanksgiving.

" It is a miracle, you will exclaim; and so, indeed, it is,—a
miracle of intelligence, of patience, and of love. . . . .

" The fact, I have said, is now clearly established, that idiots
may be educated,—*that the reflective power exists within them, and
may be awakened by a proper system of instruction;* that they may
be raised, from the filth in which they grovel, to the attitude of
men; that they may be taught different arts which will enable
them to gain an honest livelihood, and that, although their intelli-
gence may never, perhaps, be developed to such a point as to
render them the authors of those generous ideas and great deeds
which leave a stamp upon an age, yet, still, they may attain a
respectable mediocrity, and surpass, in mental power, the common
peasant of many European states."

Mr. Brady describes in his pamphlet sufficient of the occupations
of the inmates of the several institutions that he visited to show
that the plans of education recommended by Dr. Voisin and M.
Séguin are faithfully carried out, with such improvements as ex-
perience may have suggested. He also describes many cases showing
the great improvements that have been effected in the condition of

the children, and fully justifying the answer he gives to the question "what can be done for the idiot?"

"In reply then to the question, what can be done for the idiot? we appeal to the foregoing accounts as satisfactory demonstration that

"Bad habits have been corrected;

"The senses have been educated;

"To many who could not articulate the faculty of speech has been imparted;

"The muscular and physical powers have been improved;

"Some have been trained to industrial pursuits, so as to be able to earn a livelihood;

"The intellect has been developed;

"The moral feelings have been aroused;

"And, above all, the veil which bedimmed the soul has been rendered transparent, so that the light of truth has illuminated the darkened understanding of the poor idiot."

We have already shown that it is no mere dream that all this can be effected; but the history of the following case, recorded by Dr. Connolly, is so complete, and the authority for it so high, that we think it desirable to quote it. Dr. Connolly is no mean observer, he is not a man likely to be carried away by vain enthusiasm. We find his name attached as Honorary Secretary to the address of the managers of the Earlswood Asylum, a position that we have no doubt he has been led to assume by his observation of such cases as the one we are about to quote, and which he has recorded in his "Letters on the Lunatic Asylums of Paris."

It is worthy of observation that Dr. Howe, who was President of the Massachusetts Commission, has also identified himself with the movement, as has already been stated, and superintends gratuitously the Massachusetts Asylum; another remarkable proof of the influence produced on the minds of those who have personally observed the practical working of the system.

Writing of the Bicêtre, Dr. Connolly says:—

"I was accompanied round this asylum by M. Battelle, and by M. Mallon, the director, and had afterwards an opportunity of hearing from himself the exposition of the views of one of its able physicians, M. Voisin, whose singular zeal in the cause of the idiotic class of patients has caused difficulties to be overcome which appeared at first to be insurmountable. The first part of the Bicêtre to which I was conducted was a school exclusively established for the improvement of these cases and of the epileptic, and nothing more

extraordinary can well be imagined. No fewer than forty of these patients were assembled in a moderate sized school-room, receiving various lessons and performing various evolutions under the direction of a very able schoolmaster, M. Séguin, himself a pupil of the celebrated Itard, and endowed with that enthusiasm respecting his occupation before which difficulties vanish. His pupils had been all taught to sing to music; and the little band of violins and other instruments, by which they were accompanied, was formed of the old almsmen of the hospital. But all the *idiotic* part of this remarkable class also sung without any musical accompaniment, and kept excellent time and tune. They sung several compositions, and, among others, a very pretty song, written for them by M. Battelle, and sung by them on entering the class-room. Both the epileptic and idiotic were taught to write, and their copy-books would have done credit to any writing-school for young persons. Numerous exercises were gone through, of a kind of military character, with perfect correctness and precision. The youngest of the class was a little idiot boy of five years old; and it was interesting to see him following the rest, and imitating their actions, holding out his right arm, left arm, both arms, marching to the right and left, at the word of command and to the sound of a drum beaten with all the lively skill of a French drummer by another idiot, who was gratified by wearing a demi-military uniform. All these exercises were gone through by a collection of beings offering the smallest degree of intellectual promise, and usually left, in all asylums, in total indolence and apathy. Among them was one youth whose intellectual deficiency was marked in every look, gesture, and feature. . . . . . .

" In the school for idiots and epileptics at the Bicêtre, a careful register is kept of the psychological condition of each pupil, according to a printed form, for the examination of their instinctive, moral, intellectual, and perceptive state. I was obligingly furnished with a copy of the register relative to the subject of my immediate observations, *Charles Emile*, and also with a copy of the *résumé*, or summary, of his case, made by M. Voisin himself.

" The age of Charles Emile is fifteen; he was admitted to the school in June, 1843. He is described as being of a nervous and sanguine temperament, and in an almost complete state of idiocy— the faculties which remain being in a state of extraordinary activity, and rendering him dangerous to himself and to others; but still idiotic in his inclinations, sentiments, perceptions, faculties of perception, and understanding, and also of his senses, of which some were

obtuse, and others too excitable. He was consequently unfit, to use the words of M. Voisin, ' to harmonize with the world without.' As regards his *inclinations*, he was signalized by a voracious, indiscriminate, gluttonous appetite, *un érotisme hideux*, and a blind and terrible instinct of destruction. He was wholly an animal. He was without attachment, overturned everything in his way, but without courage or intent; possessed no tact, intelligence, power of dissimulation, or sense of property; and was awkward to excess. His *moral sentiments* are described as *null*, except the love of approbation, and a noisy, instinctive gaiety, independent of the external world. As to his *senses*, his eyes were never fixed, and seemed to act without his will; his taste was depraved; his touch obtuse; his ear recognized sounds, but was not attracted by any sound in particular: and he scarcely seemed to be possessed of the sense of smell. Devouring everything however disgusting; brutally sensual; passionate—breaking, tearing, and burning whatever he could lay his hands upon; and if prevented from doing so, pinching, biting, scratching, and tearing himself, until he was covered with blood. He had the particularity of being so attracted by the eyes of his brothers, sisters, and playfellows, as to make the most persevering efforts to push them out with his fingers. He walked very imperfectly, and could neither run, leap, nor exert the act of throwing; sometimes he sprang like a leopard, and his delight was to strike one sonorous body against another. When any attempt was made to associate him with the other patients he would start away with a sharp cry, and then come back to them hastily. M. Voisin's description concludes with these expressions:—' All the faculties of perception in this youth are in a rudimentary state; and, if I may venture so to express myself, it is incredibly difficult to draw him out of his individuality, to place him before exterior objects, and to make him take any notice of them. It would not be far from truth to say, that for him all nature is almost completely veiled.'

" This description not only exemplifies M. Voisin's careful mode of observation, but shows that an example of idiocy less favourable to culture could scarcely have been presented to the instructor. This same poor idiot boy is now docile in his manners, decent in his habits, and capable, though not without some visible effort, of directing his vague senses and wandering attention, so as to have developed his memory, to have acquired a limited instruction concerning various objects, and to have become affectionately conscious of the presence of his instructors and friends. His general

appearance is still that of an idiot. His countenance, his mode of walking, all that he does, declares his very limited faculties. Nature has placed limits to the exercise of his powers which no art can remove. But he is redeemed from the constant dominion of the lowest animal propensities; several of his intellectual faculties are cultivated, some have even been called into life, and his better feelings have acquired some objects and some exercise. In such a case as this we are not so much to regard what is merely accomplished for the individual. A great principle is established by it in favour of thousands of defective organizations. After witnessing the general efforts of this school of the most imbecile human beings, and hearing the particulars of Charles Emile's history, it was really affecting to see him come forward when called, and essay to sing a little solo when requested; his attempt at first not being quite successful, but amended by his attention being more roused to it. His copy-book was then shown to me, and his writing was steady, and as good as that of most youths of his station in life. The schoolmaster, who seemed to take great pleasure in the improvement of this poor fellow, then showed us how he had taught Charles to count, by means of marbles and small pieces of wood, or marks made on a board, arranged in lines, the first containing an 0, the second 00, the third 000, and so on. Charles was sometimes out in his first calculations, but then made an effort and rectified himself. He distinguished one figure from another, naming their value. Large pieces of strong card, of various shapes, were placed in succession in his hands; and he named the figure of each, as square, triangle, &c., and afterwards drew their outlines, with chalk, on a black board, and, according to the desire of M. Séguin, drew a perpendicular, or horizontal, or oblique line; so effectually attending to what he was doing that if any line was drawn incorrectly he rubbed it out and began anew. He also wrote several words on the board, and the name of the director of the Bicêtre, without the name being spoken to him.

"This case was altogether the most interesting of those which I saw; but there was one poor idiot standing a great part of the time in a corner, to all appearance the very despair of art: even this poor creature, however, upon being noticed and brought to the table, proved capable of distinguishing the letters of the alphabet. Most of the others had received as much instruction as has been described, and could count, draw lines and figures, write, perform various exercises, and point to different parts of the body, as the head, the

eyes, the arms, the feet, &c., when named to them. In all these cases, and pre-eminently in that of Charles Emile, the crowning glory of the attempt is, that whilst the senses, the muscular powers, and the intellect have received some cultivation, the habits have been improved, the propensities regulated, and some play has been given to the affections; so that a wild, ungovernable animal calculated to excite fear, aversion, or disgust, has been transformed into the likeness and manners of a man. It is difficult to avoid falling into the language of enthusiasm on beholding such an apparent miracle; but the means of its performance are simple, demanding only that rare perseverance without which nothing good or great is ever effected; and suitable space, and local arrangements adapted to the conservation of the health and safety of the pupils; to the establishment of cleanly habits; to presenting them with objects for the exercise of their faculties of sense, motion, and intellect; and to the promotion of good feelings and a cheerful active disposition. The idiot who is capable of playing and amusing himself is already, as M. Séguin observes, somewhat improved.[a] I can but regret that I had not time to watch the progress of this interesting school from day to day, and to trace the growth of knowledge in the different pupils; as of the first ideas of form and colour, into writing and drawing; the development of articulation and the power of verbal expression; the extension of memory to calculation; the subsidence of gross propensities, and the springing forth and flourishing of virtuous emotions in a soil where, if even under the most favourable circumstances the blossoms and fruits are few, but for philanthropic culture all would be noxious or utterly barren."

In concluding, we appeal to our readers to use their influence with the charitable and humane on behalf of the poor idiot. None have such opportunities as have our profession of knowing the wants of this class. It is to us that the anxious mother appeals in the hope that we may be able to dispel her fears when she first suspects the capabilities of her child. What happiness would it afford if, while we are obliged to acknowledge that the mother's doubts are but too well founded and tell her that her child is an idiot, we could point to an institution in which he might " be elevated from existence to life—from animal being to manhood—from vacancy and unconsciousness to reason and reflection. Where he might be taught

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[a] Hygiène et Education des Idiots. Par Edouard Séguin. Paris, 1843.

to discourse with his fellows—to be a blessing instead of a burden to society.   Where he might learn to know his Maker, and look beyond our present imperfect modes of being to perfected life in a glorious and everlasting future."

Skin Diseases; their Description, Pathology, Diagnosis, and Treatment; with a Copious Formulary. By TILBURY FOX, M.D. London, &c.: Hardwicke.   1864.

IN a recent number of this Journal, that for May, 1864, we had occasion to review works on skin diseases by Blake, Caillault, Anderson, and Frazer.   For this reason, it will not be necessary to give a critical analysis of the book now before us; and, therefore, we shall select from it some portions which may be considered more particularly worthy of comment.   In the first place, then, it may be observed that, to all appearance, Dr. Fox has published his treatise in a hurry, and without due regard to sufficient literary revision.   There is appended to it a list containing a considerable number of typographical errata, which might have been readily detected by the supervision of a third party, who would doubtless have altered such expressions as "women do not have sycosis" (p. 8), and "prurigo is the necessity almost of the beggar" (p. 10). The mistake of hasty publication does not, however, apply to the subject matter of the book, which, we feel bound to say, is well considered, and is calculated to prove highly useful.   Dr. Fox does not profess to issue from the press an original treatise on his subject; his object he himself describes when he says:—" I have attempted to furnish in these pages, in as compact a form as possible, the present knowledge in regard to skin diseases."   Accordingly his work partakes largely of the encyclopedic character; for he gives ample and clear references not only to the best authorities and published treatises on any given disease or controversy, but also to many valuable scattered papers which have appeared, from time to time, in this and in other medical journals.   Dr. Fox herein aims at providing the student with a text-book for examination purposes; and he also offers his book as a help to the practitioner in the cure of disease.   He altogether disclaims any style save that of condensation, which he has fully carried out   He states general principles of treatment, rather than empirical data, and gives especial prominence

to diagnosis. He does not unnecessarily obtrude his peculiar views, while he gives every fair prominence to the views of others, especially to those of the French and Germans. On classification he remarks:—" I shall follow Willan and Bateman's system, as being that most usually adopted, and at once the best for teaching purposes, referring the reader to my little essay on *The Classification of Skin Diseases* for fuller discussion, and for a series of tabular views of the various systems." This we consider a step in the right direction; for if Solomon had reason to say, that " of making many books there is no end," and to complain that " much study is a weariness of the flesh," they who study cutaneous medicine have strong reasons to complain that their studies are most vexatiously impeded by the never-ending invention of nosologies; so that if a man wants to consult any writer as to the best treatment in a given case he must find out under what name the writer in question classifies the disease, and this process is frequently difficult enough. We hope others will follow Dr. Fox's example, and adopt some known nosological standard, which may be used for purposes of identification, reserving for medical recreation their own favourite theories. One of these, that of a pathological classification, we fully agree with Dr. Fox in saying is at present impossible; while we decidedly coincide with him in the wisdom of making Willan's classification the standard one at the present time.

The best part of this book is the plan, already referred to, of giving useful authorities and references; but we would just make a few passing observations on parts of the volume itself.

On prurigo he makes some very judicious remarks, and the condensation of his style may be instanced in this extract from page 84 :—

" I may mention here that a pruriginous affection is said to be transmissible from poultry to man, and is said to be due to the sarcoptes mutans. In poultry the disease is seen about the claws, comb, and beak, and in the form of little whitish lines around the base of the comb, which are scaly, brownish beneath, presently furrowed; and at the extremities of the ridges the little insect is found.—*Revue Médicale,* July, 1859, and *Dublin Hospital Gazette,* September 15, 1859. In some cases of prurigo a crop of ecthymatous pustules and little ulcers are seen ; and the disease resembles bad itch of old standing, but entirely lacks the history of the latter."

Eczema he considers in detail because of the uncertainty and

confusion existing at present with regard to it; and having furnished a description of this disease according to the teaching of Willan, he gives a *résumé* of the opinions of English and foreign writers. After this he adds:—" Here I am only concerned with one great question, the all-essential one, however—What is the elementary lesion of eczema? Is there a disease whose peculiar character is vesicular? In spite of all that has been said or written, it appears to me that eczema is essentially and entirely vesicular." This question we look on as still *sub judice*, though, so far as our experience goes, we feel inclined to adopt the German doctrine, that eczema must be held to include many other affections, which are variously designated by Willan. We believe that microscopic research and cutaneous therapeutics lead to this view.

The encyclopedic character of the remarks on pemphigus (pp. 115–124) we warmly commend to the reader, who will find therein everything that the most curious or the most practical may desire to find or know respecting it. In his observations on anthrax he is in keeping with medical progress, and records the mode of treatment by pressure originated by Mr. O'Ferrall (*Dub. Hosp. Gaz.*, Vol. V.), and eulogised by Mr. Maurice Collis in the number of this Journal for February, 1864.

A considerable portion of the work is devoted to lepra, elephantiasis, and their kindred diseases; and here also he notices and quotes information originally given in this Journal, and in other medical publications, by medical men in this city.

Chapter IX., on parasitic diseases, is peculiarly valuable, chiefly because it shows the writer to have devoted special attention to the subject, and so entitles his remarks to more than ordinary authority. Chapter X., on syphilo-dermata, is also worthy of perusal and note. The formulary is useful, and *faithful;* for it gives the authorship of each prescription so far as Dr. Fox has been able to ascertain it. The index might well be made a little more copious; and we venture to suggest to Dr. Fox that the usefulness and literary value of the next edition (which we are sure will soon appear) would be much increased by his appending a bibliography, or dictionary, of the many authorities quoted throughout his work. We wish his good book good speed, and, as to his reward for his labour, may we add— " quod bonum, felix, faustumque sit? "

Contributions to the Knowledge of the Food of Plants. By DR. CHARLES A. CAMERON, M.R.I.A., Honorary Corresponding Member of the Agricultural Societies of New York, Belgium, &c. Dublin, 1863.

Sugar : its Composition, Properties, Preparation, and Adulteration; also some Observations on the present mode of laying the Duties on Sugar. By PROFESSOR CHARLES A. CAMERON, M.D., Analyst to the City of Dublin, &c. Dublin, 1863.

THE first of these works details the nature of several series of experiments with plants, made by the author during a period of four years. The following were the chief results:—Plants could not be developed without potash; soda was incapable of being altogether substituted for potash; soda could be partly, but not wholly substituted for potash. Elaborate experiments were made with lithia, which proved that it was not, as lately asserted by the Prince of Salm-Hortsmar, essential to the development of the grain of barley. The results of numerous analyses of animal and vegetable substances, made by Dr. Cameron, showed that lithia was frequently, but not invariably, present in plants. Peas, grass, oats, barley, asparagus, and spinach were perfectly matured without alumina or manganese. The occurrence of lead and copper in plants formed a lengthened investigation by the author, who found that that they were often, but not invariably present in vegetables, and even in man; but that their introduction into organized bodies was accidental. Dr. Cameron described, and criticized at great length, many of the experiments relating to the subject of the inorganic constituents of plants which had been made by preceding investigators, and drew from them and from his own experiments various highly important conclusions.

In the author's later experiments he used the new method of photo-chemical analyses employed by Bunsen and Kirchoff.

The author also made several elaborate investigations into the source of the nitrogen of plants, and succeeded in proving, that in addition to such well known sources as ammonia, nitric acid, and the cyanides, the following substances were capable of directly furnishing this important element to vegetables—urea, nitrite of potash, ferrocyanide of potassium, and the alkaline cyanurets. The announcement that urea is assimilable by plants has led many advanced farmers to abandon the troublesome process of fermenting

liquid manure in order to convert its urea into ammonia, which was formerly done under the idea that the urea was useless to plants.

Dr. Cameron's work on sugar describes all the varieties of that article; gives a history of sugar from the earliest times; describes minutely its manufacture and refinement; points out how its adulterations may be detected; and, finally, enters at considerable length into the subject of the sugar duties, which he recommends should be differential, on the *ad valorem* system. This little book is illustrated, and contains portraits of the *Acarus sacchari*, which recently attracted so much attention in Dublin in connexion with the sugar supplied to the South Dublin Union.

Guy's Hospital Reports. Edited by S. WILKS, M.D. Third Series. Vol. X. London: Churchill, 1864. 8vo., pp. 401.

THIS volume contains nineteen papers, all of very considerable interest. Dr. Braxton Hicks opens the volume with the *Fourth Decennial Report of the Guy's Hospital Lying-in Charity*. The second paper is by Dr. Bader, *On the Treatment of Granular Conjunctivitis by Inoculation with Pus*. The third, *On the Medical Properties of Arsenic*, is by Dr. Habershon; and the fourth is by the same author, and gives an account of *Two Cases of Disease of the Supra-renal Capsules, with Bronzing of the Skin*. Mr. Bryant contributes a *Clinical Report on Inflammation and Tumours of the Breast;* and Mr. Towne a further paper on *The Stereoscope and Stereoscopic Results*. Mr. J. C. Forster, *A Case of Intestinal Obstruction, or Modified Obturator Hernia*. Mr. Fagge, a *Case of Aneurism Seated on an Abnormal Main Artery of the Lower Limb;* and Mr. Birkett gives *A Memoir of a Remarkable Case of Disease Affecting the Shaft of the Tibia*. Dr. Taylor communicates *Cases and Observations in Medical Jurisprudence;* Mr. Cock, *Select Cases of Aneurism;* and Dr. Rees, *Clinical Remarks on Calculous Disease*. The next paper is another of Dr. Taylor's—*A Case of Poisoning by Arsenic from External Application*. Then there is one *On the Glandular Nature of Proliferous Disease of the Ovary*, by Dr. B. Hicks; and a further one from Dr. Taylor, *On Death from Rupture of the Uterus, and Expulsion of the Child by Gaseous Putrefaction*. Mr. Birkett gives *Cases of Inguinal Hernia, Depending on Abnormal Conditions of the Vaginal Process of the Peritoneum.*

Dr. Pavy follows, *On the So-called Amyloid Degeneration;* and Mr. Hinton records *Two Cases of Chronic Impairment of Hearing Improved after Scarlet Fever; Dissection of the Ear in a Case of Deafness in a Member of the same Family.* The concluding paper is by Mr. Durham, *On Certain Abnormal Conditions of the Bones.* We can only notice in detail a few of these papers, whose titles we have given in full for the benefit of those of our readers who may be specially seeking information on the subjects treated of in them.

The Report of the Lying-in Charity embraces a period of nine years, during which 14,871 women were attended. The midwifery practice of the Hospital is confined to extern patients—that is, the patients are attended by students from the Hospital at their own homes; and partly from this, and partly from a want of confidence in statistics, it is not attempted to make this a statistical report, but rather a clinical one. It is to be regretted, however, that the details are not sufficiently full to make it of much value in this respect. Statistics are, however, appealed to throughout the Report, especially where they seem to prove that patients are very much safer when attended at their own homes than when taken into a lying-in hospital. Thus, attention is more than once drawn to the lowness of the maternal mortality, which is stated to be " one in 40, from all causes whatever;" and this is regarded as " a satisfactory evidence of the advantage of home attendance over that of lying-in hospitals." This low mortality is chiefly attributed to the freedom the patients enjoyed from attacks of puerperal fever; but the inference drawn by the reporters, that this immunity from puerperal fever arose from the patients being attended to at their own homes, is by no means justified by the facts: indeed, facts are supplied that disprove the inference; for it is stated that during the period embraced by the Report they had but one case of fever in 1,000, while in twenty-one years' report it was one in 234 cases; and yet the Charity was an extern one during the twenty-one years, as well as during the period of the present report   Dr. Collins mentions, in his Report of the Dublin Lying-in Hospital, that during the last four years of his mastership there was not a single death from puerperal fever, though there were 10,785 patients delivered in the hospital. He attributes this to the system of chlorine fumigation, ventilation, and stoving that he adopted; but that this, too, was a hasty inference is proved by the occurrence of frequent epidemics in the hospital subsequently, notwithstanding the use of the same system of fumigating and ventilating. The occurrence of periods

of immunity from fever in the same hospital has been recorded by Sinclair and Johnston, and by the present master, Dr. Denham, and that without any change whatever in the attendants or management of the institution from the time that the disease most prevailed. In a paper, published in our thirty-fourth volume, Dr. Denham has argued that puerperal fever is an epidemic disease, and not endemic, and not produced by hospitals, or carried from patient to patient by the attendants. We have no doubt this is correct—in fact, in all the epidemics of puerperal fever that have occurred in Dublin within our own experience the disease was prevalent throughout the city for weeks before it appeared in either of our lying-in hospitals. But, though the disease is epidemic, and not at all, or very feebly, contagious or infectious, the epidemic influence, whatever it may be, seems, like that of other diseases, to acquire increased force and virulence from the concentration in an hospital of numbers fit for its reception. This view was advocated at a late meeting of the Dublin Obstetrical Society by Dr. Kidd, by whom it was stated that in the Coombe Hospital, to which he is one of the physicians, and which has a large extern as well as intern practice, at a period when the disease was very prevalent throughout Dublin, the proportion of patients attacked, and of those who died amongst the extern patients, was very much less than amongst the intern, and that now it is made a rule to empty the wards on the appearance of fever in them, and attend all labour-patients, except very urgent cases, at their own homes, and that this regulation had been attended with most beneficial results—the poor women obtaining the benefit of the comfort and care of the hospital during healthy periods; and when fever is epidemic, its spreading is not encouraged by congregating numbers together.

We believe the plan of combining an intern and extern practice the only method of affording lying-in women the care they require during their labours, and of preventing the spread of puerperal fever. A comparison of the cases detailed in this report with those in the Reports of the Dublin Lying-in Hospital, will prove that the mortality from truly puerperal causes, as well as the evils, short of death, that sometimes arose from them, are very much less in a well-conducted hospital than they can be in any extern practice.

We shall not attempt to analyze this Report—in fact, it is an analysis itself, and shows a very great amount of work done, and reflects great credit on the managers of the Lying-in Charity of Guy's Hospital.

In the management of placenta previa we see many things different from the practice of the Dublin school, more especially in the absence of all mention of the use of the tampon, or plug, to control the hemorrhage while waiting for the os to dilate.   It appears to us that many of the patients were allowed to lose a quantity of blood that placed their lives in immediate peril, and must have entailed months of feeble and impaired health, which they would have been saved from by the judicious use of the plug.   We extract one case, as illustrating our remark :—

"CASE 8.—Æt. 26 ; eighth confinement. Eight months and one week gone in pregnancy. Very profuse hemorrhage some hours before seen.   Attendant found the patient blanched, cold, lying before the fire. Continuous oozing for seven hours, at the end of which time her voice was strong : pulse still not so weak as might have been expected ; os uteri only admitting a finger.   Two hours later much more collapse, pulse scarcely perceptible ; voice still strong ; no pains ; os more dilated ; placenta at edge of os uteri. Stimulants were given very freely, and version by combined method effected. The foot was brought into the vagina, and gentle, continuous traction used, by which means the child formed an efficient plug. Stimulants freely given, and one dose of ergot. She continued much collapsed, though the voice was strong. The uterus now began to act, and in about half an hour the child was born. The uterus contracted well. No hemorrhage occurred after the commencement of turning. Stimulants and warmth were ordered, but she continued to sink, and died about an hour afterwards, without further loss. Child dead."

Mr. Bryant's paper on inflammation and tumours of the breast is one of very great value, more particularly in reference to diagnosis. The following are his remarks on the value of the retracted nipple as a symptom in tumours of the breast :—

"There can be but little doubt that the importance of this symptom of the retracted nipple has been considerably over-rated, and that, as a positive indication of cancerous disease, it has been over-estimated.   It may co-exist with a cancer in the breast, as it may with some simple or innocent affection ; but, on the other hand, a cancer of the organ may be present unconnected with any such morbid condition.

"For a retracted nipple may be described as an accidental symptom in the development of a tumour ; it is the product of mechanical causes, and its presence is determined by the manner in which the gland is involved in the disease, rather than in the nature of the affection itself

Should any tumour, simple or malignant—should any abscess, chronic or acute—attack the centre of the mammary gland, a retracted nipple, in all probability, will be produced ; for, as the disease so placed will necessarily cause material separation of the gland-ducts, their extremities—terminating in the nipple—must be drawn upon, and, as a consequence, a retracted nipple will be the result.

In the early stage of an infiltrating cancer of the organ this symptom is one of frequent occurrence, the nipple being always drawn towards the side of the gland which may be involved; at a later stage, however, of the affection, when the infiltration is more complete, the nipple may again project. In a central chronic abscess of the breast the retracted nipple is equally common, and in the true cystic adenocele it may be also present. In the ordinary adenocele, whether cystic or otherwise, it is rarely present, for very plain reasons, as these are not diseases of the breast-gland itself, but only situated in its neighbourhood ; in rare cases, however, such an association may exist : in one case only have I ever observed it, and in that some blow or injury had preceded the development of the adenoid tumour ; and it is open to a doubt whether the retracted nipple might not have been brought on by some chronic inflammatory condition—such a cause being well able to produce it."

Mr. J. C. Forster, in his account of a case of Intestinal Obstruction, or Modified Obturator Hernia, discusses the question of abdominal explorations :—

" The part constricted was a small loop of the lower portion of the ileum, near its junction with the cecum. On tracing the bowel downward this loop was found to pass through a constriction of peritoneum, situated opposite the right obturator foramen, but within the abdomen. By this band of peritoneum the bowel was contained in a perfect sac, and strangulated. There did not, at first, appear to be any connection between the intestine and the obturator foramen, but subsequent investigation showed that there also existed a sac external to the foramen, and connected with the internal one. This external sac was not of large size, but was very distinct ; it was continuous with the internal one at the upper part of the obturator membrane, where the vessels pass. The external sac was empty.

" The knuckle of intestine contained in the internal sac was about two inches in length ; it was of a very dark colour, almost gangrenous, and filled with fecal matter, and was so tightly constricted that a considerable amount of force could not dislodge it. The broad ligament had not any part in the strangulation.

" This case is, to our mind, one of extreme interest, and again opens up the question of exploratory incisions into the abdomen in cases of

internal strangulation.   We had previously been disposed to take the view so ably maintained by Mr. Jonathan Hutchinson, that the ill success attending this operation was so decided that, upon the whole, it should be held inadmissible in the practice of surgery; and we can only regret that we were so far influenced by the results shown in Mr. Hutchinson's paper as to have abstained from resorting to a measure which we believe the symptoms justified.

" The suddenness of the attack, coupled with the previous history, plainly indicated sudden strangulation of a portion of intestine; but there was not any such strangulation, so far as we could judge, at either of the outlets, or at any other point where it could be felt.   We need hardly say, indeed (what has been omitted in the report furnished by Mr. Brietzcke), that all the outlets were most thoroughly examined—the inguinal and femoral regions, the obturator membrane, so far as practicable—the vagina, labia, rectum, and general surface of the abdomen— every spot that could afford even the slightest chance of a piece of intestine escaping from its proper position.   All our endeavours to elucidate the cause of obstruction were in vain; yet it was perfectly certain, from the very marked character of the symptoms, that a piece of intestine had become suddenly strangulated.   Neither was there evidence of previous peritonitis, or pelvic cellulitis, or similar mischief, at any period of life, which might have laid a basis for this sudden attack.   Nor were we thrown off our guard by the account of the left inguinal swelling; the parts were so lax, the two sides so symmetrical in appearance, and the whole course of the canal so distinctly to be felt, that we had no doubt the patient herself was in some error about that swelling; and it was only upon the advice of our esteemed colleague, Mr. Cock, and when the woman was in a dying state, that, on the faint hope of finding a clue to the symptoms, an exploratory operation was performed in the left inguinal region.

" There is no question that, useful as statistics may be, they cannot possibly give us any help in determining the plan of treatment to be adopted in any particular case, especially in such a one as the present.   When indications of internal strangulation exist each patient must be treated according to the special symptoms of his case; and hence it becomes necessary that we should look for a particular symptom, or group of symptoms, which may be considered pathognomonic of a certain condition, and which may thus serve to guide us in our treatment   For instance, in the above case sudden and aggravated vomiting, with pain and constipation, accompanied with a peculiar constriction across the scrobiculus cordis, lasting twenty-four hours or more unrelieved, plainly pointed to a strangulated intestine.   The evidence amounted almost to certainty, and, as such, would undoubtedly have justified us in opening the abdomen and making search for the source of constriction.   We have ever since regretted, indeed, that the course was not pursued.

"There is a remarkable specimen in the Guy's Museum, showing the result of this operation in a case somewhat resembling the preceding, and in which, had it not been so long delayed, could hardly fail to have issued very differently.

"The case is concisely as follows, taken from the ' Catalogue : '—

"Miss —, æt. 36, in September, 1847, had constipation for some days, and subsequently pains in abdomen. January 20th, 1848, was seized with vomiting ; purgatives were given, but with no effect. Constipation and vomiting continued, with indication of strangulation of the bowel, until the 1st of February, when Mr. Hilton made an exploratory incision into the abdomen, and found a knuckle of intestine entering the obturator foramen on the left side. This he removed, but the patient rapidly sank and died in a few hours. On *post mortem* examination the strangulated portion was found in the abdomen, an inch and a half long, dark coloured, but not gangrenous.

"Doubtless there are many obscure cases of constipation, attended with sudden and decided symptoms, simulating those related as occurring in our patient, in which it would be madness even to suggest an operation ; cases of constipation which have lasted many days, and even weeks, often with a previous history of peritonitis. To these cases we do not refer ; but there is another class, though few and very exceptional, in which the suddenness of the symptoms, and their extreme severity, plainly point to a sudden and severe disorder, requiring decided remedial measures.

"No doubt a tendency to fall into operative error would be likely to befall the young surgeon, and time alone will enable him to judge between the cases which should be treated by general measures and those in which the knife is called for.

"It is true that we are arguing from the result of the *post mortem ;* but the idea of the operation was current in our minds whilst the patient was alive, though we were slow to act upon it, influenced, as before said, by the remarkably unsuccessful results of its performance hitherto. A fatal peritonitis, or one of the numerous other evils of opening the abdomen, might have arisen had the operation been performed ; but we see no greater reason to expect such untoward results in these cases than in those of ovariotomy, in which the abdominal cavity is opened, and the intestine successfully separated from the diseased ovary. It must be remembered also, that to free the intestine from its strangulated state was the only means whereby the life of the patient could by any possibility be continued,"

Death from Rupture of the Uterus, Inversion of the Uterus, and Expulsion of Child by Gaseous Putrefaction, is the summary of a very extraordinary case contributed by Dr. Taylor, from notes furnished to him by Mr. E. Bedford and Mr. A. Roberts, of Sidney,

formerly pupils of the Hospital. A woman, in labour of her seventh child, died, undelivered, on the 27th of May, 1864. Reports arose of want of care on the part or her medical attendant, and the body was exhumed on the 3rd of June. The following is Mr. Bedford's report of the case :—

" From the evidence it appeared that on the 26th May she was attacked with shivering and a feeling of weakness ; she then became warm. She sent for a medical man who lived close to her house. She described her symptoms to him, and stated that she was near her time, and though she had pain in her head and chest, she had no labour pains. She was in a small room with a fire, and a quantity of blankets were over her. She was directed to have the fire put out, the blankets removed, and, as the bowels were not opened, a dose of castor-oil was ordered. Some time after, as this did not act, an enema was directed to be given. In a few hours she had another shivering fit, and her medical attendant visited her again. The woman then complained of thirst and flatulence, and still said she had no labour pains. The nurse said the waters had been discharged ; medicine was ordered to relieve the flatulence, cooling applications were directed to be applied to the head, and the medical attendant left the house. As his residence was near, and a midwife was in attendance, he did not feel it necessary to remain until pains set in. The medical man had not left many minutes before a violent pain came on—not only severe, but long. The nurse felt the head of the child very low down, and observed that it receded a good deal when the patient drew her breath, and after the pain had subsided. The woman suddenly became very weak, delirious, and died in rather more than half an hour from the time of this pain coming on. The nurse then sent for another medical gentleman, who, on his arrival, found the patient in a dying condition, the head of the child low down, and there were no pains. He gave gin and ergot, but these were not swallowed ; he sent for his instruments, but before they arrived the woman had died.

" An inspection of the exhumed body was made about a week after death, and the following appearances were found :—The body was well nourished ; there was a good deal of decomposition, and from that cause the abdomen was much distended. The dead and decomposed body of a male child, which had arrived at its full time, was lying between the thighs of the deceased ; the head was towards the feet of the mother, and the feet underneath the uterus, which was inverted, and, with the placenta attached to it, was lying also between the thighs. The umbilical cord was not divided. On opening the abdomen a good deal of gas escaped ; there were about four pints of blood effused in the cavity of the perito-neum ; the hand could be passed between the bladder and rectum into a pouch which extended between the thighs. Towards the rectum there

was found an opening. On replacing the uterus, which was not contracted, there was observed a rent through it and the peritoneum. The rupture of the uterus was at its posterior part, a little above the cervix; it was transverse, and about six inches long.

" The heart was flabby, with much fat; the liver and right portion of the diaphragm were very soft. There was a small quantity of extravasated blood in the muscular structure. The left lung had at its apex tubercular deposit, and between the pleura and spine, on that side, there was a small quantity of coagulated blood.

" From these appearances, and from the general history of the case, the opinion given at the inquest was that death was caused by a rupture of the uterus. The loss of blood, as a result of this rupture, was so sudden and copious that the first symptoms gave no clue to the coming event; that the rupture, and consequent hæmorrhage, were necessarily fatal; and that no blame attached to the first medical attendant.

" There are many points of interest in this case. 1. The rupture took place after one prolonged pain, without any previous symptoms that would lead to a suspicion of what was about to happen. 2. Though the rupture was large, yet the body of the child did not escape into the abdomen, no doubt owing to the fact that the child had been brought down very low by the prolonged pain, which nearly passed it into the world. Rupture of the uterus then took place, and the child was too low down to recede to its original position.

" The child was not expelled from the mother by any *post mortem* contraction of the uterus, for that organ was not found contracted. The *post mortem* passage of the child and inversion of the uterus were, I consider, the result of the pressure of the gas arising from decomposition in the abdomen. In many cases, perhaps most, this organ contracts after rupture, as in rupture of the intestines the mucous membrane is generally everted; but in some severe lacerations from external violence I have seen the torn parts lie without any muscular action taking place in them, and, although the person lived many hours, yet the contents of the bowels had not passed through the lacerated parts. In this case the violent action of the uterus may have produced a similar condition.

" If the uterus was in this inactive state after the rupture, and after systemic death, it would be lying like a piece of wash-leather applied closely to the body of the child in its cavity; the gas from decomposition collecting in the abdomen, which was largely distended at the time of inspection, would gradually press upon the fundus and its contents. Under these circumstances, the body of the child would be pushed forwards, followed by the closely attached uterus, which would thus become inverted. This would account for the position in which they were discovered. Had the child been born by the contraction of the uterus this would have been observed before the body of the woman had

been placed in the coffin. Whether the reasons here given are considered correct or not, the case is, so far as I am aware, quite novel; for I have nowhere seen recorded an instance of inversion of the uterus as a result of *post mortem* changes."

In his remarks on this case Dr. Taylor relates several examples of rapid and extensive gaseous putrefaction, and quotes the leading particulars of a case published by Dr. Richter in Caspar's *Vierteljahrschrift*, closely resembling this of Mr. Bedford's, in which the child was expelled on the fourth day after the death of the mother, and before the body had been buried.

Dr. Pavy's paper on the So-called Amyloid Degeneration formed the substance of a portion of the Gulstonian Lectures of 1863. It opens with a history of the literature of the subject from the first notice by Dr. Hodgkin, in 1832, of the pathological condition to which the term has been applied. Dr. Hodgkin did not give any name to the appearances he described, but succeeding observers called it "lardaceous" or "waxy;" and it was looked on by some as a malignant disease, by others as scrofulous, and by some as a species of fatty degeneration, and by others again as a degeneration of an albuminous, instead of a fatty character. At this phase of its history an entirely new feature of interest was given to it by the announcement of Virchow that he believed it to consist of an amyloid, or starch-like degeneration. Dr. Pavy enters into a critical examination of the evidence as to the nature of the deposit, and concludes that it is a nitrogenized, not starchy, material:—

"From the evidence thus before us the lardaceous deposit appears to be a nitrogenized material. There seems certainly no sufficient justification for regarding it as of an amyloid nature; and the term amyloid degeneration ought therefore, properly speaking, to be abandoned. From Robin's statement, Virchow's view does not receive credence in Paris. Looking upon the deposit as nitrogenous, the terms lardaceous and waxy are not less objectionable, chemically speaking, than that of amyloid; but there is this difference with regard to them—that the former were suggested by the physical appearance which the degenerated organs present; the latter was proposed to denote an alleged chemical constitution, which has been by no means established. Whilst the terms lardaceous and waxy are, therefore, in one respect, pertinent, the term amyloid would seem to fail to apply even upon the ground that led to its employment."

1. *On Change of Climate: a Guide to Travellers in Pursuit of Health*, &c. By THOMAS MORE MADDEN, M.D. London: Cautley Newby. 1864. Small 8vo., pp. 687.

2. *On Australasian Climates.* By J. DONGAN BIRD, M.D. London: Longman. 1864. 8vo., pp. 162.

3. *Les Stations Médicales des Pyrenées et des Alpes.* Par le DOCTEUR H. C. LOMBARD.

The Health Resorts of the Pyrenees and the Alps. By DR. H. C. LOMBARD. Geneva: Cherbulier, Libraire. Small 8vo., pp. 176.

WE believe that upwards of eighty thousand individuals die annually of phthisis in the British islands! Many of these cases, if early removed to warmer and less humid climates, would have been probably restored to health; and all, except those too far advanced in disease, would have been benefited to a certain degree, and enabled to pass in comparative comfort the remainder of their precarious existence. A few years ago little care used generally to be observed by the physician in selecting a climate for his patients, and sufferers from pulmonary consumption used, indiscriminately, to be ordered off to Torquay, Pau, Pisa, Nice, or Rome, totally irrespective of their various pathological states, and of the relative value of the generally totally different climates. It was known, for instance, that the annual mean temperature of Pau was high, and that was quite sufficient. It never came into the prescribers' heads to inquire after the amount of rain which fell in Pau; and some would have been surprised, indeed, if they had been told that the rainfall in that part of France was as great as in Cork! Yet such is the fact. We are very much more careful now-a-days. We have learnt to discriminate between dry tonic climates and damp relaxing ones; we have also learnt to place less value on that most fallacious guide, " the mean temperature," and we give due prominence to other meteorological and climatal peculiarities in our selection of climates for the different classes of patients we have to prescribe for. Still we have much to learn in this branch of therapeutics; and it is, therefore, with much pleasure that we receive fresh contributions on the subject of climate, all the more so when they come in the very agreeable form in which they present themselves

in the books now before us. The two first works are the production
of medical men who sought for health in change of climate, and
obtained it. Dr. D. Bird was clearly consumptive; Dr. Madden is
not so explicit as to his state of health; the information they convey
is, therefore, doubly valuable, and the agreeable manner in which it
is conveyed adds still further to the value of their volumes. Here
and there we find the pages marred by such misprints as "*iodine of
potassium,*" "*a fortiore*;" but such are evidently only slips of the
compositors.

Dr. Madden's book will, especially, be found of value by those
who wish to travel on the continent, for health or otherwise, as it
contains a quantity of useful, interesting, and valuable information
on a variety of matters. We do not, however, coincide with him
at all points; and as we go along we shall point out where we
differ, and give our reasons for so doing.

Dr. Bird's book is exclusively occupied with the climates of
Australia, Tasmania, and New Zealand. We regret that, personally,
we know nothing of those climates; but, although we never have
visited those distant countries, we have received ample information
concerning them from intimate friends who have long resided in
every part of them, and, in so far as we have learnt, Dr. Bird's
account agrees with theirs, except that, perhaps, he speaks too
strongly of the advantages, and glides too gently over the draw-
backs; though, no doubt, he has every reason for speaking well of
Australia, for, at p. vi. of the Introduction, we find the following:—
"Himself a *poitrinaire*, the writer has a personal, as well as a
professional, experience of the effects of antipodal climates on
consumption. More than three years ago two of the best stetho-
scopists in London pronounced his lungs tuberculous, to which
opinion daily hemoptysis, rapid loss of flesh, shortness of breath, and
known hereditary predisposition gave but too sure confirmation. A
six months' rest from business, occupied in amusing travel, with
careful treatment in the meantime, failed to do more than check the
more urgent symptoms; and, therefore, a total change, by a voyage
to Australia, was recommended and at once undertaken. In less
than three months from his landing in this colony the patient
gained sixteen pounds in weight, lost all his symptoms, and remains
at the present time in excellent health." The great distance of those
countries will, however, in the majority of cases, prove a decided
objection; but where distance made no difference we have no doubt
that a change of climate to Australia would prove of great benefit,

for, first of all, there would be the long sea voyage in warm latitudes, and that of itself, it has been long known, is sure to prove beneficial in almost every stage of consumption, alleviating the sufferings of those far gone, and frequently curing the incipient cases. The value of the climate of Victoria, in Australia, may best be summarized in the following words:—" A continuance of overcast or cloudy weather is never observed in Victoria, the sky clearing as soon as the rain has fallen. Fog is of very rare occurrence." . . . " It is a temperate warm climate, whose average Summer heat is but two or three degrees above that of London; while in Winter it is warmer than Nice or Naples, and as warm as Valencia or Barcelona; and actual cold is never felt at or near the sea level. The air is generally dry, always stimulating and ozoniferous; but so tempered by the prevalence of ocean winds that it is prevented from becoming irritating like that of Nice or Provence."

Returning to Dr. Madden's book, we find that he classifies the health resorts of Europe into such as are " dry, warm, and bracing," and into such as are " warm, equable, and slightly humid." Among the first he classes " Hyères, Nice, and Malaga;" among the second " Madeira, Rome, Pisa, and Lisbon," adding, as auxiliaries beyond the boundaries of Europe, " Australia" and " Egypt." We happen to be personally acquainted with the majority of these climates, and we endorse, with pleasure, the greatest part of Dr. Madden's remarks, especially with what he says of Malaga and Hyères, of which last he evidently writes from his own observation when he says:—" The climate of Hyères is the mildest in Provence." . . . " The rain mostly falls at night, so that there is rarely a day when the invalid may not go out." As to the " mistral" N.W. wind, the great bug-bear of those who only know of Hyères from books, it is very seldom felt there. Hyères possesses, in our opinion, all the advantages of Nice, while having none of its drawbacks. We shall follow Dr. Madden to one more continental clime, and then take leave of him, warmly recommending his book, both to the healthy and the sick, as being full of agreeable and useful information. We shall now consider the climate of Pau, and we select it because it has been for years the place, of all others on the continent, where the English in search of *climate* resorted to, either by their own desire or advised thereto by their medical advisers, and because we so entirely and fully concur with Dr. Madden in all he says respecting it. Hear:—" The climate of Pau is essentially cold, variable, damp, and dreary during Winter." . . . " Confiding

in the works on this climate I had read, I arrived in Pau, from Algiers, in the beginning of January, expecting to find a mild, equable, and genial climate. I was soon undeceived; the change was literally from an atmosphere warm and bright as Summer in this country to one nearly as cold and damp as some parts of England or Ireland in mid-Winter." . . . " Rheumatism is a common complaint;" . . . " and it appears to me that the more thoroughly the climate of Pau is studied the fewer will become the number of patients labouring under pulmonary disease sent to Winter in that town."

Dr. H. C. Lombard's little book gives a very short, though scientific, account of almost all the mineral sources and other health resorts of the Pyrenees and the Alps. It will be found of use to the physician who wishes to become extensively acquainted with this branch of therapeutics, as many places are mentioned in it an account of which is not to be found elsewhere; but, unfortunately, the hygienic conditions of some of these are so exceedingly bad as to render them practically useless, or rather preclude their use altogether: and we suspect not many English patients would coincide in the doctor's account of the comfort of some of them. We happen to know two or three of them, and we venture to assert that none but the hardiest of Alpine travellers could make themselves even moderately comfortable in them. Balaruc, for instance, might prove a very desirable place for the treatment of some diseases, its waters containing, in addition to many other ingredients, a sensible amount of arsenic; but Balaruc is situated on the borders of a swamp, near the shore of the Mediterranean, not far from Cette (well known as the great manufacturing *entrepot* of all kinds of *sham wines*), and consequently uninhabitable the greatest part of the year. Dr. Lombard's account of Biarritz and Arcachon is excellent—it is only too concise; and his directions for the class of patients that ought to be sent to both will be found an efficient and safe guide to the practical physician. Arcachon especially deserves to be better known; two perfectly distinct climates seem to exist there during the Winter, as you take up your abode on the shore of the lagoon or plunge into the interior of the Pine Forest—this last being several degrees warmer, and equally well supplied with residences. Dr. Lombard says:—" The resinous emanations which pervade the air of the forest are of the greatest advantage in bronchial catarrhs, and in all cases of excessive secretions either from the lungs or other organs." . . . " People of excitable nervous

temperament, phthisical patients, and especially such as are worn out by excessive muco-purulent expectoration or by hemorrhage, will derive the greatest relief from sojourning in the forest." From all we have learnt concerning Arcachon, not only from Dr. Lombard but also from other sources, we expect that it will become a very favourite health resort, not only for Summer but for Winter also. We must now take leave of our authors, as we have already trespassed beyond the limits of our space, but warmly commending them to the attention of our readers.

De la Glycerine, et de ses Applications a la Chirurgie et a la Médecine. Par M. DEMARQUAY. Paris: Asselin. 8vo, pp. 240.

Glycerine and its Uses as Applied to Surgery and Medicine. By M. DEMARQUAY.

A VERY valuable contribution to therapeutics. Glycerine is a very peculiar substance, and one which has not yet been as fully applied as it will no doubt eventually be. Closely allied to alcohol in its chemical relations, it is found to possess characters of great interest and importance. Perfectly harmless in itself, and even seeming almost to possess nutrient qualities, probably from its power of diminishing waste, it becomes, when treated with nitric and sulphuric acid, a most violent poison, second only to strychnine in virulence. Its powerful solvent properties are well known; its power as an antiseptic perhaps not so well. Dr. Demarquay has found it of the greatest value as a dressing of foul indolent ulcers, and especially in the treatment of phagedena and hospital gangrene, of which last we are thankful to say we see very little in our hospitals. Those who wish to try glycerine will find much valuable information in this book, as also many elegant formulæ for prescribing it.

PART III.

MEDICAL MISCELLANY.

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Reports, Retrospects, and Scientific Intelligence.

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PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.[a]

Dr. Churchill, President.

Ovarian Tumour.—Dr. Edward Hamilton brought before the notice of the society an abdominal tumour which presented some very remarkable and peculiar features. A female, aged twenty-four, unmarried, and of a healthy appearance, was admitted into Steevens' Hospital, suffering from a tumour of the abdomen, situated in the middle line, about half way between the umbilicus and the pubis; and every one would be struck by the resemblance it bore to the glans penis, presenting the colour and the shape of that organ. On examining the tumour more carefully they found it to be a pedunculated cyst; it was evidently hollow, and containing some fluid. It was covered, especially towards the right side, with that peculiar epithelium which was so frequently found on prolapsed mucous membrane. Towards this portion the surface was thinner, and, apparently, weaker; and there appeared to be one or two spots where ulceration was about to commence. There was also an appearance of slight ulceration, or irritation, on the skin, near the tumour. On examining more carefully they found that this glans-like organ was surrounded by a sort of prepuce. They saw there a lip-like ridge, which bounded a cavity through which the pedunculated tumour protruded; and they were able to pass the finger, almost to its entire depth, round the peduncle of the tumour, yet, still, without entering the abdominal cavity. The examination caused but little inconvenience to the patient, and when at rest she suffered little or no pain in the tumour.

The history she gave of the case was this:—She stated that about three years before she had suffered from an attack of fever. This was followed, for six months after her recovery, by irregular menstruation, the

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[a] These reports are furnished by Dr. R. W. Smith, Secretary to the Society.

catamenial discharge occurring every two weeks, and being profuse in quantity. This continued for six months, when she perceived, on the surface of the abdomen, some little enlargements, which might be compared to warts. There were some three or four of them, and they apparently grew together, forming one large tumour, for which she applied for relief to Dr. O'Kelly, of Celbridge. Pressure was applied to the tumour, and continued for about a month, under which treatment it apparently receded, but from the description he had got it seemed to leave a sort of cavity on the surface beneath, from which a certain amount of discharge issued. Things continued in this state, the woman suffering very little from the tumour, which had apparently disappeared until last March. She said that early one morning, on making some slight exertion, the tumour appeared suddenly to return, and shortly after its re-appearance it burst, discharging a large quantity of hair, short and curled, about the size of an orange. Three or four days afterwards there was a second escape of hair, which she drew from the tumour herself; these hairs were longer, much coarser, and not of the same character as those that issued in the first instance. After this the part appeared to heal over partially, and a slight discharge issued from the depression. In the month of September last her attention was again directed to the tumour, which appeared to come forward again. She said she suffered pain and inconvenience from the rubbing of it against her dress; and towards the latter part of October she came into hospital presenting the character of tumour that he had described. She left hospital on account of the death of a relative, and came back again, when she was examined, very carefully, by Dr. Churchill, who took a very kind interest in her case, which was one of great obscurity. In consultation it was determined that they might slip the chain of an écraseur round the tumour, and remove it without danger; but as she had some fever upon her, and complained of tenderness in the abdomen, it was thought right to defer all operative measures until the fever had passed off. Unfortunately, however, a low asthenic sort of peritonitis set in, and the woman died in the course of a few days.

On examination they found that the pedunculated tumour, visible externally, occupied a cavity, which, in the living subject, was fully capable of containing the finger; and the surface of which was covered over with a sort of false integument having hairs growing from it. The tumour was attached by a double peduncle. Pursuing the examination they found that the tumour passed into the peritoneum, to which it was attached by a second pedicle. The left ovary was greatly enlarged and hardened, and the peduncle of the prominent tumour was firmly attached to it. They also found, attached to the broad ligament, one or two such cysts as that which was now exhibited. The uterus was tolerably healthy; the right ovary was somewhat enlarged, as if menstruation were about to commence.

Dr. Hamilton pointed out, on a drawing of the parts by Mr. Connolly, the several peculiarities of the case, and proceeded to say that the exact nature of this tumour was open to a good deal of speculation. Probably there were two theories which might explain the appearances presented. The first hypothesis would suppose that there were two conditions of the ovary present—one a cyst, and the other a tumour attached to its surface. That the cyst made its way to the surface, advanced by ulcerating through the abdominal walls, and also discharged its contents—a quantity of hair; that through the cavity thus formed the tumour attached to the surface of the ovary protruded.

The second hypothesis would be, that this was virtually the posterior wall of an ovarian cyst, which had come forward and been prolapsed through the rest of the cavity.

On careful dissection a considerable quantity of hair was found in this tumour, and four molar teeth almost perfect.—*November* 26, 1864.

Warty Tumour.—Dr. MacSwiney exhibited a tumour as large as a walnut, of a warty character, which had been removed about six weeks previously from between the shoulders of a female, about eighteen years of age.

She had been seen by Dr. Horgan, of Drogheda, who, considering it probable that the tumour should be removed, had sent her to Dublin, to Dr. MacSwiney, for his opinion and treatment.

The tumour, which was situated on the surface of the skin, in the median line, between the scapulæ, was of an oval shape, and about three inches long, by one and a-half or two inches broad. It was of a dark green or olive colour, having a partly laminated, partly fissured surface, and presenting, at one point, a tumid purplish appearance, remarkably like that of the vascular growths, or nevi, with which surgeons are familiar as occurring congenitally. At one of its sides this tumour was slightly detached from the skin; and here a raw surface, discharging a thin secretion, was to be seen beneath

Dr. MacSwiney admitted her into Jervis-street Hospital, when, after a consultation with the surgical staff of the hospital, the tumour was removed by Mr. Tyrrell. Before the operation Dr. MacSwiney applied an anesthetic agent long since recommended by Dr. Arnott, of London, but which had, however, fallen into unmerited disuse, namely, a mixture of salt and ice, contained in a bladder. On applying this to the part for a couple of minutes a considerable degree of anesthesia was produced, as was ascertained by pricking with a pin; and had the application been longer continued, no doubt total insensibility to pain would have resulted. Some pain appeared to be experienced as the deeper-seated textures and attachments were divided; but there was, incontestibly, great diminution of

pain in some, and total absence of it in other, parts. The wound soon healed satisfactorily.

This patient had what might be termed a warty diathesis, as almost the entire of the back of the left hand and forearm was covered with small warts, those common enlargements of the papillæ of the skin so frequently met with; and the growth between the shoulders appeared to be, to a great extent, an enlargement of a similar character. It was congenital so far as she knew, having been noticed, she had heard, a short time after her birth. It never gave her any uneasiness until recently, when she observed her linen stained yellowish green where it touched the tumour, and, upon further scrutiny, it was found that a sero-sanguineous discharge was poured out slowly from the edges, which were becoming slightly sore, evincing a tendency to ulcerate in some parts.

The circumstance of this tumour being congenital, its size, situation, and appearance, the recently developed disposition in it to ulcerate, and its warty character, were the chief points of interest in the case.

Dr. MacSwiney was, as may be supposed, much influenced in his desire to have it removed, by the knowledge of the now well established fact that these growths were liable to degenerate into epithelial cancer. Mr. Paget in his *Surgical Pathology*, Mr. Erichsen, and others have shown that this change does occasionally occur; and in Mr. Maurice Collis' work on cancer statements are given which fully confirm the fact of the tendency of certain warts to degenerate. Indeed Mr. Collis illustrates the progress of cases of epithelioma by detailing the several steps in the progress of a common wart, from the period of its growth, as an enlargement of a cutaneous papilla, through the stage of hypertrophy with ulceration, and finally, hypertrophy with infiltration. Microscopic examination of this tumour showed much epidermic scales and cutaneous cells.—*Novembe.* 26, 1864.

Caries of the Cervical Vertebræ.—Dr. Hayden said the pathological specimen which he had the honour of submitting to the society was taken from the body of a female, aged thirty-seven, who was admitted into the Mater Misercordiæ Hospital, on the 18th October, and died on the morning of the 19th November. It appeared that up to a few years ago her health had been comparatively good; about that time, however, he learned both from herself and from her friends, that she had contracted syphilis from her husband. He could not ascertain, however, that this was followed by cutaneous eruption or by any other constitutional symptoms whatever. From that time up to eight months before her admission into hospital she was in bad health, and as she described it herself, her health was utterly broken up. About eight months ago she began to experience unpleasant sensations in the back of the head and neck, accompanied with spasms of the posterior cervical muscles. She was unable to rotate her head

without uneasiness, or to lie on her left side in bed with comfort. On the 18th October when he (Dr. Hayden) first saw her she lay on her right side; the head was depressed on the sternum, the knees and hip-joints were flexed, and in this position she lay fixed, and refused to be moved in the slightest degree; any attempts to move her caused acute pain. The features were expressive rather of the apprehension of pain than of the actual existence of it. The face was pallid; deglutition was perfect, and to this point he wished to direct particular attention; respiration seemed quicker than normal, but in every other respect was perfectly natural; the pulse was weak and rapid, and her sleep was disturbed.

She directed his attention to the back of her neck as the seat of her suffering; and on examining this region he found there was marked tumefaction of the entire posterior surface of the neck. It was, moreover, observed that the surface was sensitive to pressure or even to contact, in an extreme degree from the occiput downwards. On percussing the spinous processes, she complained of scarcely any pain except in the immediate neighbourhood of the occiput. The muscles on the left side of the neck and trapezius were in a state of rigidity, while those on the right side were completely relaxed. He had some difficulty, owing to the pain felt by the patient, in examining the pharynx, but he satisfied himself that there was no prominence in that region. The diagnosis lay between muscular rheumatism affecting the posterior cervical muscles and caries of the superior cervical vertebræ. He came to the conclusion that the latter was the nature of her disease from the following considerations :—Firstly, they had the history of the case extending back for eight months; they had the patient's sufferings progressively aggravated from that period to the time of her admission into hospital; they had, moreover, the fact (which was very striking) that the patient complained of pain radiating from the upper cervical vertebræ over the scalp to the coronal suture. They had also the fact that the trapezius and sterno-mastoid muscles were principally engaged— that is to say, the muscles which are supplied by the spinal accessory nerve on that side. He came to the conclusion that it was caries of the vertebræ, notwithstanding the absence of dysphagia and pharyngeal prominence. On the 10th November the patient passed to the care of his colleague, Dr. Hughes, and subsequently came under that of Mr. Ellis. About two days before her death she had partial motor paralysis, first of the right, then of the left arm, then of the right leg, and afterwards of the left leg. Upon examination after death they found that the atlas was in a state of caries; that its left transverse process, with a portion of its posterior arch, was detached, and lay forward against the spinal cord. The left articular process was in a state of caries, whilst the right transverse process was in a state of integrity. Caries was

commencing in the articulation between the atlas and the axis on the right side. On exposing the spinal cord they observed, in the first place, that its surface and its investing membranes were deeply congested, more especially at a point corresponding with the displaced left posterior half arch of the atlas. At the origin of the second pair of cervical nerves and where the spinal accessory ran along between their roots, the membranes were deeply congested, contrasting remarkably with those on the opposite or right side, which were perfectly pallid.

The question then arose as to the immediate cause of death in the present case. Of course, he could offer nothing more than a hypothesis; but it appeared to him the facts would best accord with the following view of the progress of events :—It was manifest that in the first place there had been detachment of the left posterior half arch of the atlas from the other part at the root of the transverse process—that this had existed for some time before death; and as a consequence of that, it would appear that the weight of the head, which carried the neck and head forward, caused the rough end of the detached posterior half arch to press on the cord, causing irritation of the spinal marrow, and spasms of the muscles supported by the spinal accessory nerve, and irritation in the course of the great occipital nerve—that is to say, radiating from the atlas over the scalp. Up to a short time before her death it appeared that the transverse ligament remained in a state of integrity; it therefore held the anterior half arch of the atlas and the odontoid process in their normal relations to the cord; but at last this gave way, and then the head fell forward, pressing on the spinal cord, and thus caused death

Dr. Hayden thought he might say that this case illustrated the value of a competent knowledge of anatomy as an aid to diagnosis, looking to the fact that the two muscles supplied by a particular nerve were the subjects of particular irritation, and that a sentient nerve arising in the immediate neighbourhood of the seat of disease was also the subject of irritation in its course over the scalp.—*November* 26, 1864.

Disease of the Mitral Valve.—Dr. Head exhibited two examples of ossification of the mitral valve. In the one there was dilatation, and in the other great contraction of the auriculo-ventricular opening. In the first case the characteristic physical signs were distinctly marked, viz., a loud bruit accompanying the first sound, most distinctly heard at the apex of the heart, and extending over the left mammary region. The impulse was strong; but the pulse was soft, weak, and compressible. There were frequent attacks of dyspnea, accompanied by the usual signs of pulmonary congestion; there was general anasarca, with albuminous urine. On examination after death all the cavities of the heart were found dilated; the mitral valve was ossified and contracted, being quite insufficient for closing the auriculo-ventricular opening, which was very

much dilated. The other valves were healthy. This patient died suddenly, in consequence of a fibrinous clot filling the left ventricle and obstructing the aortic opening.

In the second case there had been difficulty of breathing, and great distress, with a sense of impending suffocation. The heart's action was strong, tumultuous, and rapid; the first sound was most distinct under the sternum, over the right ventricle; and the second could be traced along the pulmonary artery, much further than along the course of the aorta. The pulse was quite imperceptible at the wrist, and could, with difficulty, be felt in the brachial artery; no cardiac murmur of any kind could be detected. There was no anasarca, nor was there any albumen in the urine.

A *post mortem* examination showed the heart to be of natural size; the left ventricle was small and contracted; the walls were slightly thickened, but soft, breaking down under slight pressure. The mitral valve was contracted, and much ossified; the circumference of the auriculoventricular opening was also ossified, and the orifice so much narrowed as scarcely to admit of the introduction of one finger. The semi-lunar valves were normal; but the aorta, innominata, brachial and carotid arteries were much contracted. The lungs were congested, and presented five or six well-marked spots of pulmonary apoplexy, one being in the apex of the left lung. The points of interest in this case were, the very great difference between the heart's action and the strength of the pulse, the first sound being more distinct over the right than the left ventricle, and being more easily traced along the course of the pulmonary artery than along that of the aorta, leading to the suggestion that the impulse of the heart may have been caused more by the contraction of the right than of the left ventricle, which must have filled with blood very slowly, in consequence of the extreme degree of contraction of the mitral orifice.

The absence of murmur in cases of this kind has been explained by Dr. O'Ferrall, who showed that when the orifice became much contracted the valve, which was incompetent before, was now sufficient to close the opening and prevent the regurgitation that had existed in a less advanced stage of the disease.—*November* 26, 1864.

Pericarditis.—DR. ROBERT M'DONNELL brought the following case before the society:—Phelim Fee, aged twenty years, came under my notice as an inmate of the Mountjoy Prison, in October, 1863. He was then a muscular, healthy-looking man. In the Spring of the present year his health began to fail, he lost flesh, his appetite diminished, and although there was no evidence of organic disease as yet developed, there was little doubt that it existed in some latent form.

He was admitted to hospital on June 9th, 1864. At this time he complained of great weakness and lassitude; his pulse was rapid; and there

was slight œdema of the feet. He had no cough, nor had he even expectorated blood; there was no albumen in the urine; and, in short, a careful examination failed to discover any tangible local disease.

He continued to lose ground; and on the 2nd of August, when examining him, I discovered that there existed a distinct, but not very loud, friction sound over the heart, although there was no pain or uneasiness, or indeed any other symptom indicating disease of this organ. At this time cough had come on; there were night sweats, with occasional diarrhea, and anasarca. The case was one, no doubt, of general tuberculosis, such as are not unfrequently met with in the convict class, in which tubercle is freely scattered through the body, without at first being sufficiently abundant in any one organ for positive diagnosis. As to the pericarditis, this was also supposed to be of a scrofulous character. The patient died on September 13th.

Upon examination, *post mortem*, tubercular disease was found to exist extensively. The entire surface of the heart was encased in lymph, so thickly that the deposit in some parts exceeds the thickness of the muscular wall of the heart itself. The tricuspid and semilunar valves were healthy.—*November* 26, 1864.

Cancer of the Gall Bladder.—DR. STOKES exhibited a tumour taken from the body of a female, aged fifty-six, who, at an early period of her life, adopted the fashion of eating extremely little; and for many years she subsisted upon not more than was barely sufficient to support life. She also abstained, to a great extent, from the use of wine or any fermented liquor. Her health, however, was good, although she was extremely emaciated and very pale. She was a patient of Dr. Moore's, of Anne-street, and consulted him on the 10th September last, and stated that for some two or three years past she had felt a sensation of weight, particularly on going up stairs, and she was anxious to know whether or not an abdominal tumour existed.

Dr. Moore found an oval tumour, about the size of a goose's egg, in the hypogastric region, a little to the right of the umbilicus; it was movable, very hard, and slightly tender on its surface. It had not caused her any annoyance except the feeling of weight already mentioned. From the time she first consulted Dr. Moore the tumour was observed rapidly to increase, and she then consulted Dr. M'Clintock, who, on examining it, came to the conclusion that it was, in all probability, of a malignant nature. Dr. Stokes saw her some time after Dr. M'Clintock had visited her. Her local suffering had greatly increased. Any motion of the body brought on excruciating pain; yawning, sneezing, coughing, attempts to relieve the bowels all caused excessive pain in the part. When he saw her he felt no doubt, from the extreme hardness of the tumour and the general symptoms, that the disease was of a malignant

character; but at that time he did not think the liver was the seat of the affection, as between this organ and the tumour there was a very distinct sulcus.   After some time, however, this sulcus disappeared, and the tumour and the liver seemed to be perfectly continuous, so that he was led to doubt, to a certain extent, the accuracy of his original diagnosis. She had, however, no symptoms whatever of hepatic disease.   The local symptoms of suffering and distress continued, and the tumour appeared to grow with extraordinary rapidity, until it became a large projecting mass in the right side of the abdomen.   One peculiar circumstance connected with the case was, that she was subject to fits of ptyalism, or rather a hawking up of frothy fluid from the pharynx.   This would last from ten minutes to a quarter of an hour, and then cease.   Towards the close of life she complained of great distress of breathing, and had severe coughing and wheezing; but still paroxysms of the frothy fluid occurred, leaving her, in the intervals, perfectly free from it.   This was a very remarkable symptom, and one which he had never observed before.   He had since seen a patient of Dr. Smyly's, who laboured under intra-thoracic cancer, in whom a similar symptom was noticed.

Dr. Stokes then exhibited the morbid parts, but did not enter into a minute description of them, not having been able, as yet, to examine them with sufficient care.   He purposed bringing the case under the notice of the society again at their next meeting.—*December* 3, 1864.

Cancer of the Lung.—Dr. White said the morbid specimens which he exhibited were removed from the body of a lady fifty-six years of age, who died on the previous Thursday.

Her history was that of an unhealthy woman from her youth.   She had a very depraved appetite, a constant craving for food of various kinds unsuited for her, and for nine years previous to her death she was subject to severe attacks of illness, attended with acute pain, chiefly referable to the region of the diaphragm.   She also had slight jaundice. It was during an attack of this kind, and one of a very severe character, in May last, that he was first called on to attend her; and although she had not at any time passed gall stones, he came to the conclusion that she was suffering from them.

During his attendance on this occasion he examined the lungs carefully, but failed to detect any evidence of pulmonary disease.   At one time he thought she had an attack of pleuritis, but he could not detect the physical signs of that affection.   He came, therefore, to the conclusion that the lungs were perfectly healthy.   She recovered from the attack, and passed from under his observation.   About the 12th or 13th of July last she began to complain of cough, and after two or three days coughing there was a slight expectoration of blood, which, continuing for some days, induced her to seek advice.   She came into Dublin, and saw Dr.

Stokes. On the 16th September Dr. White was asked to visit her again. She was sitting in the parlour, after dinner; and the only thing peculiar which he observed was the attitude in which she sat—very much bent forward, and complaining of pain through the chest. She described herself as having caught cold early in July, when cough set in, and from which she had never since obtained any relief; and that during the past two months she had two attacks of spitting of blood. He, at that time, only had an opportunity of examining the upper portion of the lungs; they were both perfectly clear on percussion; but there was a slight bronchitic râle in the upper part of the left lung. On the 18th, not being satisfied with the way in which she was going on, he directed her to remain in bed until he made a more careful examination, and ordered the sputa to be kept. He then ascertained that instead of having had only two attacks of hemoptysis, she had only two in which the amount of blood expectorated would half fill a wine-glass; but that during the whole of the time from the beginning of July she had from time to time expectorated a small quantity of blood, mingled with frothy mucus, and in the intervals perpetually hawking up mucus in large quantities. He found bronchial râles in the lower part of the right lung. That which he had previously found in the upper part of the left lung had passed away. When she drew a full breath she said it gave her pain, and referred it to below the left clavicle, and also to a point corresponding to the root of the right lung, in which situation the pain was most severe at times. He found comparative dulness in the latter situation, and in some parts of the right lung there was a total absence of the respiratory murmur. The upper and anterior portions of the lung were quite free, but there was now a peculiar symptom—stridor from below.

The case went on for ten days, and little fleshy-looking masses were expectorated. No day passed that there was not a trace of blood in the sputa; and there was a continuation all through of an expectoration of a large amount of frothy mucus. During one of the last days in September, having made up his mind that he could not attribute her disease to any ordinary pulmonary affection, he came to the conclusion that cancer of the lung existed. He then requested the assistance of Dr. Stokes, who, after a careful examination, arrived at the same conclusion. At the same time there was an absence of many of the symptoms frequently attendant on that disease. There was no varicose state of the veins—no glandular enlargement—no œdema of the extremities or face—a total absence of any external sign of cancer in any portion of the body. The case proceeded: symptoms of dyspnea came on; the stridor from below increased to a great extent; and on the day Dr. Stokes saw the patient she complained of dysphagia. She said it was only some things she could not swallow; but there could be no doubt dysphagia existed, and at intervals it was very great. Symptoms of a form of hectic peculiar to

cancer appeared. She had remittent fever, with intensely hot hands; but it was not attended with the sweating of phthisis. In the beginning of November the dulness that was found posteriorly in the end of September had extended through the entire of the lower and back portion of the right lung, and the upper portion alone remained pervious to the air. The left lung was acting vigorously; but at the end of the first week in November she was attacked with pleurisy in the posterior part of the right side. He was afraid to use mercury, but the inflammation rapidly subsided under slight treatment. Three or four days after the subsidence of that attack, he found, on examination, that the upper portion of the right lung was completely consolidated. There was bronchial respiration, but not a trace of vesicular murmur. About ten days before her death she was attacked with bronchitis of the left lung; and after a week of intense suffering, chiefly from dyspnea and dreadful palpitation of the heart, she expired, having about ten minutes of cessation of pain immediately before her death.

On examining the chest he found all the internal veins congested. The liver was perfectly healthy in size, but appeared to be harder and denser in structure than normal; and, on turning it up, he found the gall-bladder distended, and containing 269 gall-stones. On opening the pericardium—in which there were about two ounces of fluid—the first thing that attracted his attention was the large encephaloid mass, which he now exhibited, projecting itself into the pericardium. The right lung was adherent in many places to the costal pleura, and to the diaphragm; and, in some situations, it broke down under his fingers in trying to detach it. At the root of the lung, anteriorly, there was a large cancerous tumour, extending into and involving a portion of the lower lobe of the lung. On turning the lung over he found that the posterior mediastinum was entirely filled up by the tumour, which pressed on the œsophagus, and constricted it in two places, and also involved in its substance the cardiac ganglia and recurrent laryngeal nerve; thus probably accounting for the stridor from below and the severe palpitations. The substance of the lung itself was, for the most part, free from cancerous disease; but the whole of the lung was in the third stage of pneumonia.

The first point of interest connected with the case was the peculiar character of the expectoration, upon which there never had been any stress laid until that day, in the case just now brought forward by Dr. Stokes. This peculiar expectoration occurred not only in these cases, but Dr. Hudson informed him that the same symptom was present in the case of a brother of this lady, who died six months ago, under Dr. Hudson's care, with undoubted symptoms of cancer of the lung. During his (Dr. White's) attendance on this lady her family frequently remarked to him the similarity of the expectoration. There also was an occasional expectoration of blood, and of those small meat-like masses, which Dr.

Hudson had described to him as presenting the appearance of masses of muscular fibre without the striæ, and also the constant frothy expectoration ; at first bringing it up from the pharynx, and, finally, it seemed to come from the mucous membrane of the trachea and bronchi. Next, there was the total absence of varicose veins ; for, until a day or two before her death there was not a trace of any. There was no enlargement of the glands, either in the axilla or elsewhere. There was no œdema of the face or extremities.—*December* 3, 1864.

Disease of the Tarsus.—MR. CROLY exhibited a specimen of very extensive disease of the tarsal bones. The patient, a young man of twenty-three years of age, stated that when he was between ten and eleven years of age, he then got a fall and hurt his right knee, which disabled him for two or three weeks. A swelling then occurred below the outer ankle of the left foot, became red, and ultimately the skin gave way ; thin fluid was discharged for two or three years, but never healed up entirely. A similar swelling then commenced on the inside of the foot, near the scaphoid bone, and burst, discharging a thick fluid. He was unable to walk on the foot until he was seventeen, when the disease appeared to subside, until he reached his nineteenth year, when the swelling recurred, and the entire foot became very painful. When he was admitted into the City of Dublin Hospital, under his (Mr. Croly's) care, he had two or three scrofulous ulcers under the left angle of the jaw. The foot presented a clubbed appearance. It was enormously swollen, and there was a large orifice, discharging purulent matter, over the scaphoid bone. There was also a sinus opening near the neck of the astragalus. There was no enlargement of the end of the tibia ; and on pressing the foot against the tibia the patient did not complain of pain, so that it was concluded that the ankle-joint was sound. On last Tuesday morning he proceeded to remove the foot, according to Professor Syme's method, but in the course of the operation it became evident that the tibia was extensively diseased. The leg was therefore amputated in the usual situation below the knee. When a section of the tibia was made the bone was found softened to a remarkable degree, nearly up to the line of amputation. The astragalus, the os calcis, and all the other tarsal bones presented the usual characters of scrofulous caries.— *December* 3, 1864.

Tumour Removed from the Thigh.—MR. CROLY laid before the society a tumour that he had just removed from the thigh of a man aged twenty-four, who had been admitted into the City of Dublin Hospital on the 29th November last, with a large tumour on the internal aspect of the right thigh, towards its posterior part, and near the centre of the limb. It commenced about five years ago as a small lump about as large as the

top of the little finger. It was quite hard, movable, subcutaneous, and free from pain. During the first three years the increase in its size was almost imperceptible, but since that time it grew rapidly, with slight pain; and at the time of his admission into hospital it was as large as a cocoa nut. It lay posterior and internal to the femoral vessels. It was perfectly movable in the longitudinal direction, and had an elastic, cartilaginous feel, there being one spot on its anterior surface, about the size of a penny, much harder than the rest. This was the only part where pressure caused slight pain. The only inconvenience experienced was slight stiffness of the limb on stooping, but in other respects motion was not interfered with in the slightest degree. The bulk of the tumour, however, caused the patient to desire its removal. The circumference of the thigh at the part affected was 23 inches, whereas the sound one at the corresponding point was but 17½ inches. There was no wasting of the limb, no enlarged glands in the groin, nor any symptom leading to the supposition that it was of a malignant nature. The tumour was removed this morning. It weighed thirty-four ounces and a half when removed. On making an incision into it, a quantity of sero-sanguineous fluid escaped. It showed, on section, a number of cysts, some of which contained clots of blood, and others cerebriform matter. One portion of the tumour was hard, and cut like a piece of cartilage.—*December* 4, 1864.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.[a]
TWENTY-SEVENTH ANNUAL SESSION.

Dr. CHURCHILL, President.

ADDRESS OF DR. DENHAM, PRESIDENT FOR THE PAST SESSION, ON RESIGNING THE CHAIR.

IT affords me high gratification to see the Twenty-seventh anniversary of the Dublin Obstetrical Society ushered in and honoured by such an influential and numerous meeting of its friends, members, and associates. Our late esteemed President, Dr. Beatty, now President of the King and Queen's College of Physicians, whom we are all happy to see among us to-night, explained to you, in his opening address two years ago, that a fundamental change had been made in the society—a change, he said, possessing more of the democratic element than we had formerly possessed. Whatever name may be given to the change, the effect produced has, in

[a] These Reports are supplied by Dr. Geo. H. Kidd, Secretary to the Society.

my mind, been highly conservative; life, energy, enlarged proportions, and a vigorous manhood, have been infused into a society that for years had made little perceptible advancement; watched over and guarded by Presidents many, and Vice-Presidents unprecedented in numbers, like some only child surrounded and watched over by fond parents or indulgent friends.   Although born with fair proportions, and giving promise of life and vigour, it presented from time to time a sickly aspect, and even gave some indications of a rickety constitution.   From this precarious state of health it is now happily freed, and may, I think, be fairly said to have attained its majority, though a little late in life, yet with a vigorous constitution sufficient to inspire the hope that as it was the first Obstetrical Society ever formed, so it will be among the last to dissolve.   When the change in the constitution of the society, just alluded to, took place, we only numbered about 50 members, including 9 Presidents, 7 Vice-Presidents, and 19 Honorary Members.   Now we have—Honorary Presidents, 9; Honorary Vice-Presidents, 6; Honorary Members, 17; Members, 153; Associates, 44; including a President, and 2 Vice-Presidents.   Gentlemen, I speak not this in the language of boasting, but with the hope of stimulating the society to still greater activity and greater usefulness, and desire to impress upon every member now present that our future success will depend more on continued individual exertion than on the spasmodic fitful efforts of the mass.   We have amongst us the representatives of every branch and every grade in the profession. The physician, the surgeon, and the general practitioner, meet here on common ground, and for a common purpose.   Let it be ours ever to uphold the honour and dignity of the profession, and conduct our meetings and discussions with that earnest, yet calm and dignified demeanour which I am happy to say has in all times past characterized in a peculiar degree the meetings of the Dublin Obstetrical Society.   Let it be ours to show to the world that we are what we profess to be, and really are, in this metropolis at least, one of the most enlightened, highly-educated, disinterested, and united professions in the entire community.

A rapid sketch of our proceedings during last session will better indicate the present condition and future prospects of the society than any words of mine could do.   As you have already heard from our esteemed and excellent Secretary, Dr. Kidd, to whose untiring energy and devotion to the interests of the society much, very much indeed, of our prosperity is due, we held 7 general meetings last session, at which 18 papers were read, including the President's truly practical address; 30 new members, and 7 associates, were added to our list.   Our late President, Dr. Beatty, in his opening address gave us a most interesting and graphic description of 7 operations for ovariotomy, at all of which he had been present and had assisted; in 4 of these recovery followed, and in 3 death was the result.   At our second meeting the subject of ovariotomy was again

brought under our notice by Dr. Albert Walsh, one of the surgeons of the Adelaide Hospital, who gave a most interesting account of a case in which he had operated successfully. The operation was admirably performed, as we might naturally expect from one possessing so cool a head and so steady a hand. Dr. Walsh, in his paper, made some judicious and practical remarks on the subject, pointing out the difficulties to be overcome, and the dangers to be avoided, and concluded by a short notice of all the cases on record where the operation has been performed; from which it appeared that 454 cases had been operated upon in England and 300 in America. Of those operated on in England, 251, a little more than one-half had recovered. Of 300 recorded in America, 179 are reported as successful.

I entirely agree with my friend, Dr. Beatty, when he says the operation is still in its infancy in this country, and still on its trial. Strange to say, that in this country, where the science of surgery has long been cultivated to the utmost limit, where philosophic minds of the highest order, by patient investigation and close industry, have been led to originate operations the most critical and dangerous in the whole range of surgery, on the one hand, and to the discovery of means rendering other operations, equally dangerous, unnecessary—strange to say, this operation for ovariotomy has met with little favour, and I regret to say, less success, in this than in any other country. Is it that we are less skilful, or less fortunate, or more candid, than our English or our American brethren. We have eleven cases on record, where the operation has been performed in this city. Three of these, including one in which the tumour was not removed, recovered, and eight died. How long those 330 women, whose deaths are recorded, might have lived, and what measure of health and comparative comfort they might have enjoyed under the care of kind and skilful physicians on the one hand, or what pain and suffering they may have escaped by their sudden and untimely end, it is quite impossible to say; but looking at the entire results in their most favourable aspect, they suggest to my mind considerations of the gravest character. Where the tumours are movable, and rapidly on the increase, and where the health of the patient is on the decline, I grant that there are strong and weighty reasons to induce us to operate; but where the tumour is slow in growth, and the health tolerably good, I think we should be slow in recommending a plan of treatment in which the result of life or death is so nearly balanced.

At our second meeting, Dr. Cronyn described a case of ruptured uterus, and exhibited the morbid specimen. In this case the patient had been under the care of a midwife for many hours, and the rupture had taken place some time previous to her coming into Hospital. Allow me to congratulate the profession, and suffering humanity, on the almost total absence of this deplorable accident from the records of obstetrical

practice, at least in this city. A very brief retrospect of this subject will show how much it is on the decline, and the cause of the diminution I think it will not be very difficult to discover.

During Dr. Collins' mastership thirty-four cases of ruptured uterus are recorded, in three of which the rupture took place before admission into hospital. In Drs. Hardy and M'Clintock's report, during three years of Dr. Johnson's mastership, 9 cases of rupture are given ; and in the report of Dr. Shekleton's mastership for 7 years, by Drs. Johnston and Sinclair, we have a return of 17 cases. During the three years that I have had the honour of being Master, we have had the good fortune to witness only 2 cases of a similar kind. The ratio, according to these reports (*cæteris paribus*), would be 34 cases of ruptured uterus during the first 7 years reported ; 21 cases during the second 7 years ; 17 during the third 7 years; and if the same good fortune attends us during the remaining period of the present mastership, the mortality—for I look upon it as almost a fatal casualty—should only be $5\frac{1}{2}$ in the 7 years.

To what are we to attribute the diminution of this, pre-eminently the most distressing, because the most fatal of all the casualties, to which the parturient woman is liable. The forceps, a safe and simple instrument in the hands of the well-instructed, experienced physician, was formerly looked upon as one of the most destructive of implements, inflicting evils even worse than death. To advocate the use of such an instrument was looked upon as a deadly sin by the fathers of the profession ; but the dreaded evils from this formidable weapon, and the phantoms raised in former days have now, in a great measure, passed away ; like the baseless fabric of a vision they have vanished, and have given place to an earlier interference, and a more rational treatment, in cases of tedious labour.

The evils formerly supposed to arise from the use, or rather the abuse, of this instrument, such as laceration or sloughing, are now known to be, in the majority of cases, the result of protracted and undue pressure on the soft parts by the head of the child. We deem it not only safe, but right and proper, to apply the forceps much earlier now than formerly, because failing this we are enabled, when necessity demands, to give relief by other means sufficiently early to save the mother from much protracted suffering ; and what is of still greater moment, we thereby give her a proportionally better chance of recovery. To the improvements effected upon the forceps, and the dexterity evinced in their application by our esteemed friend, Dr. Beatty, are we largely indebted for this happy change in the practice of midwifery, and the almost total absence of cases of ruptured uterus. At our third and fourth meetings we had two elaborate and important papers on the use of the forceps. One by Dr. Ryan, in which he gave an account of 1,206 cases, in 977 of which the forceps was used 101 times, or about once in $9\frac{1}{2}$ cases. The object of the writer seemed to be to lead us to the much more frequent use of the instrument

than we have been accustomed to, or than, we fear, our private patients, in this country at least, with their innate delicacy of feeling, and instinctive dread of instruments, would readily submit to. Dr. Ryan mentioned a new method which he had adopted for calculating the duration of labour. If, he says, upon first examining a patient, I found labour had commenced, I noted the time accurately, and again when the child was born ; and if after the first examination I left her, and returned in 4, 6, or 12 hours, I always included the whole time, as if I had remained with the patient from the commencement. The extract from my note-book, he remarks, will show 620 cases timed in this way, the duration of which averaged 1 hour 47 minutes. This method of calculation, he goes on to say, I think is more useful and applicable under the circumstances in which I come before you, because it shows the period of waiting before the forceps was applied. You will see in that paper several forceps cases of one hour, and half an hour waiting, and some even at quarter of an hour. The period when the forceps was applied was when the os was fully dilated or dilatable.

The second paper on the forceps was read by Dr. Henry Halahan late assistant in the Dublin Hospital, and never did this hospital possess a more attentive or satisfactory assistant. The scope of his paper seemed to be rather to warn us against the too frequent use of the instrument, and to show, from hospital statistics, that the labours are quite as safe, and the recoveries, as a rule, more rapid, when the ordinary run of cases are left to nature, and no instrumental interference is had recourse to. This subject I look upon as one of deep practical importance, but difficult to decide upon by numbers. My experience leads me to think that when we have a healthy season, and are free from epidemic influences, we may almost do anything we please to our patients, either in or out of hospital ; but when there is a tendency to puerperal fever of any kind or form, these patients will die, and recoveries prove slow, no matter what practice we adopt.[a]

At the third meeting we had the subject of missed labour brought under the notice of the society, in a very able and deeply interesting paper by Dr. M'Clintock. The term, missed labour, he defines as a case of uterine pregnancy, in which, through failure of parturient action, the fetus is retained for some indefinite period beyond the term of normal gestation. If anything were wanting to show the nature and importance of this society, the paper now under consideration might well be cited. The learned writer states that cases of missed labour are among the rarest in obstetric practice, the present case being the first ever brought under the notice of the Dublin Obstetrical Society, and the second case of the

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[a] One thing we should scrupulously avoid, and that is never to have recourse to instruments for the mere purpose of saving our own time.

kind ever published by any Dublin obstetrician. Well, what has been the effect of the publication of this case by Dr. M'Clintock? Why, that at our next meeting but one the subject was again before us, and we had a second paper from the same author, giving an account of not less than five cases of missed labour sent to him by practitioners living in different parts of the country, and occurring not only in the human subject but in the sheep and cows, and other domestic animals. It is probable that Dr. M'Clintock's desire to benefit this society first led him to think of publishing the first case; and if the first case had not been published the others would, in all probability, have remained in oblivion for ever. Permit me for a moment briefly to direct the attention of the society to two cases which came under our observation lately in the Dublin Lying-in Hospital, and in some measure bearing upon the subject.

Bridget Donegan, a fine healthy-looking woman, aged thirty-five, was admitted into hospital, Ward No. 12, on 28th of August last, in labour of her sixth child. She states she has had three abortions from time to time the last twelve months, previous to her present confinement. As the labour progressed the pupil on duty felt a hard unyielding substance pressed down inside the os uteri; but as it did not seem to interfere with the advancement of the head through the os we determined not to interfere.

The poor woman had a safe and easy labour, and the placenta came away at the usual time without any unusual assistance. In about half an hour after the binder had been put on, I made a careful examination, and found the hard substance still inside the os uteri. By pressing down the fundus with my left hand I succeeded in getting a firm hold of the foreign body with the thumb and index finger of my right hand, and with some difficulty, and not without inflicting a good deal of pain on the patient, I drew down what I now hold in my hand, and what you will find to be a considerable portion of the superior maxillary bone, with a well-grown molar tooth attached to it. Some slight arterial hemorrhage followed, but no bad symptoms appeared; and she left the hospital, well, on the ninth day, with a fine healthy baby. Both mother and child continue in good health ever since.

Second Case.—Rosanna Davis, aged forty-eight, was admitted into the Chronic Ward some short time since. She is small of stature, and appears older than she admits herself to be. She stated she had been pregnant seven times, and had given birth to five living children, all right and natural. Ten years since she proved pregnant for the last time, everything going on naturally up to the eighth month, the motions of the child being distinctly felt; but after that time the motions ceased, and the abdomen began to diminish in size, a profuse fetid discharge taking place from the vagina at the same time. She then put herself under medical treatment, after which her health was again restored, and she

continued quite well till eighteen months since; when being, as she thought, five months pregnant, she passed, per rectum, some portions of bone; after which she was admitted into hospital, and by the aid of mild purgatives several portions of the skeleton of a fetus came away in the fecal discharges. Her general health greatly improved, and she has since enjoyed very good health.

At our fourth meeting Dr. Hely reported a case of congenital malformation of the rectum, in which a communication was ultimately established from the rectum into the vagina. The child did well, but continued to defecate through vagina. At the same meeting Dr. Hardy gave in a case of pregnancy with a blighted ovum. He also exhibited some very useful varieties of cerecloths for the breasts, when overdistended with milk. At our fifth meeting, the Secretary, Dr. Kidd, read an interesting communication from Dr. Murphy, Professor of Midwifery, University College, London, on the comparative claims of craniotomy and the Cesarian section in cases of deformity of the pelvis. He also exhibited a pelvimeter, a very simple and ingenious instrument, invented by Professor Murphy, for the purpose of measuring the pelvis. Dr. Maurice Collis also read a paper of considerable interest on some cases of ovarian disease; but as he intends again to revert to the subject, and did not wish to have it published, we will not further allude to it.

At our sixth meeting, Dr. Hardy exhibited a fatty tumour removed from the labium; and I had the honour of submitting some cases of operation for ruptured perineum and prolapsus uteri. The operation was simple, and easy of accomplishment, the recoveries good, and the benefit to the patient permanent, and such as to induce us to operate in several cases of a similar kind since. We have also on two occasions stitched up the perineum immediately after delivery, in bad lacerations, and with decided success.

Dr. Hayden then read a paper of much practical value, on circumscribed phlebitis after delivery, and gave the history of two cases, both of which recovered.

I may here mention that we had a case lately in the hospital somewhat similar. The woman went on most favourably for several days, when she complained of pain in the right leg. An inflamed varicose vein was discovered, which ended in suppuration. The inflammation extended upwards; other abscesses followed; and she died one day after delivery. She was seen by Drs. Croker and Adams.

At our seventh and last meeting, Dr. Foot exhibited the skull and scalp of a double-faced lamb, very repulsive to look at, but of much interest.

Dr. H. Kennedy then gave a paper on abdominal tumours in their relation to their diagnosis, which exhibited his usual research and accuracy of observation; and Dr. Cronyn detailed the history of a case of labour complicated with complete occlusion of the vagina, which was opened

by a crucial incision after labour had set in.   The woman gave birth to a living child, and left the hospital in a few days, quite well.   Her previous labour had been difficult, and was followed by sloughing of the vagina. She was the wife of a soldier, a class of men not very fastidious in their amours.   Our surmise, therefore, was, that he must have had connexion with her before the abraded surfaces had time to heal, and that occlusion followed conception.

In thinking how I could best fulfil the duty devolving upon me to-night, and how best conduce to the interests of the society, I had determined specially to allude to the subject of atmospheric influence upon disease, as affecting not only the type and form, but the duration and severity of the attack.   The subject, however, is so extensive, and I have already trespassed so long upon the patience of the society, that with your permission, gentlemen, I will postpone my remarks on this subject to some other occasion, and conclude by giving you some information on obstetrical knowledge, or rather the absence of it, that has very lately reached me from two distant and widely-separated regions of the earth.   A lady whom I lately attended gave me the following account of her first confinement, in the island of Trinidad.   Unfortunately, her medical attendant, a European physician, was from home when she took ill, and she was obliged to give herself up to the tender mercies of a native midwife of no small reputation, who commenced operations by rubbing her over with castor-oil from head to foot.   She would not allow her to lie down, but kept her either walking about or sitting half upright in an arm-chair.

Her labour commenced at eleven o'clock at night; and at five in the morning the midwife asked for a consultation, when another midwife was called in.   They said it was then necessary to yoke her, and accordingly they commenced operations. A muslin handkerchief was wrapped round the middle and fore-finger of the attendant's right hand, and the fingers thus covered were then thrust down the patient's throat, as far as they possibly could be, for the purpose, they said, of forcing the child into the world. The poor patient was nearly suffocated before they left off, and became so exhausted that she literally fainted.   When she recovered, her child was born, and she found herself sitting up to the knees in a vessel of cold water, her attendants, one on either side, busily engaged in bathing her.   Her dress was now changed, and she was laid upon the bed, with a blanket under her, but no covering over.   After this they pommeled her over the entire abdomen with the shut hands, to make, as they said, the after-birth come away.   This away, they allowed her to sit up and arrange her dress, and then gave her a supply of negus, honey, and potatoes, which was her daily food for some time.   She was up on the third day, and had, notwithstanding, a very good recovery.

I shall now turn to the East, and read to you a letter which I have

received from my friend and relative, Mr. Robson, who has just returned after a sojourn of twenty years in Syria, and who, with his wife and child, was there during the entire time of the late massacre. The writer, I may mention, is a missionary, but not a medical man :—

"Medical men are not employed in the delivery of women in childbirth, midwives are the only attendants in such cases. Exceptions are so very rare as not to be worth notice.

"The native doctors very seldom undertake surgical operations of any kind. Such operations are commonly performed by barbers. But in recent times, at least, it is not every barber who ventures on surgical operations. In Damascus, and every Eastern city, there are a few persons who act both as barbers and surgeons. The two arts, with a certain amount of knowledge and practical skill, are hereditary in the families of such persons. Some of these barbers will perform even serious operations, as the setting of a broken limb, or the amputation of a limb, or lithotomy, with very considerable expertness and success. All their knowledge, however, is traditional. Sometimes they are not able even to read. Barbers of an inferior class undertake simple operations, as bleeding or drawing teeth.

"The profession of midwife is seldom hereditary, and there is no class among them possessed of traditional knowledge and skill like that of the higher class of barbers I have mentioned. I believe that the best of them have no knowledge or skill beyond what a little experience would give to any woman. From all I learned in the East, I came to the conclusion that the whole process is left entirely, or almost entirely, to Nature, and that in cases in which an operation such as changing the position of the child, or any more difficult one, would be necessary for delivery, the women are left to perish. The only aid given in the extraction of the child is of the simplest kind, such as pulling at it in cases in which the difficulty arises from feeble action of the womb, or something of that kind, and not from an unnatural presentation, or any other cause which would render delivery impossible without an operation. I am sure that the want of skilful assistance causes a great many deaths.

"This representation may appear hardly credible ; but a residence of twenty years in the East, in habits of familiar intercourse with the people, enables me to make it with full confidence in its accuracy.

"I know of only two midwifery cases in Damascus in which an educated physician was called in. The physician was an American gentleman, Dr. Paulding, and my information was from himself.

"The patient in one case was a native Christian. The most famous midwives had been procured, and some native doctors had been consulted. The latter refused to interfere, as they had no experience and no knowledge of midwifery. Dr. Paulding, when called in, found a case of wrong presentation, with the arm of the child projecting from the vagina.

The woman had been in that condition for three days. She was some-times placed in the midwife's chair, which I shall mention below, and sometimes laid, to rest. Dr. Paulding proposed to perform the requisite operation; but though warned that otherwise the woman must die, the friends would not consent, and she died undelivered.

"The other case was that of a Turkish woman in her first confinement. She was a young and handsome Circassian, a great favourite with her husband. There was difficulty, delay, and suffering. The Turk called in the most famous native doctor in Damascus. Like his brethren, he would not, and could not, undertake a midwifery case; but he proposed, and the husband consented, to bring in Dr. Paulding. He found that nothing was wrong, and assured them that no interference was necessary. After a severe labour, mother and child did well.

"Both of these cases, it seems to me, confirm what I have said of the ignorance and helplessness of the midwives. In the first case, not only were the midwives unable to render any aid to the woman, but an opera-tion was so unheard of, and contrary to the prejudices of all concerned, that, although Dr. Paulding was well known, and had a very high character in the place, they would not allow him to attempt to save the woman. In the second case the midwives seem not to have been able to tell whether the process was going on naturally and hopefully, or not. (I am not sure whether it is correct to use the term *operation* in a case where, as I suppose, instruments would not have been used.) No fact ever came to my knowledge which could make me think that any of the Eastern midwives had skill like that of the surgeon barbers, to perform any operation. They are experienced, but untaught, nurses, without any medical or surgical skill whatever; and if Nature cannot effect the delivery the woman is left to die.

"There is, of course, the same want of skill to mitigate after-sufferings when they occur.

"The woman is seated in a large arm-chair having a semicircular piece cut out of the middle of the front of the seat. The whole form of the chair is peculiar and ancient. It is the property of the midwife. It is spoken of in Exodus i, 16. Perhaps verse 19 of the same chapter, implies that Eastern midwives were as unskilful thirty-five centuries ago as they are now. The services they could render do not appear to have been counted very important.

"My impression is that childbirth is somewhat easier, and somewhat less frequently dangerous in Syria and adjacent regions than in this country, but I am fully persuaded that the difference is not great. I compare, of course, similar classes of women with each other—as the inhabitants of Eastern cities with those of cities in this country, and the peasant women of Syria with those of Ireland. The facts which I have gathered show, also, that the women of the wild Arabs of the desert

suffer less than even the peasant women of Syria; but there are no statistics in Turkey. As I have no personal acquaintance with the tropical parts of Africa and Asia, I cannot say whether the difference in this respect between the women of those regions and the women of this country is greater than that between our countrywomen and those of Syria and Asia Minor, but I presume that it is.

" Books of travels often say that girls arrive at puberty in Syria much sooner than in England. That is a mistake. The reason for making the assertion is apparently the prevalence of very early marriages. Girls are indeed commonly married at a very early age, but they are commonly married before arriving at puberty. Girls are married at almost every age, from ten years upwards; but thirteen, fourteen, and fifteen years are the ages at which the largest numbers are married; and so the greatest number of first-born children are born two, three, or four years after the marriage of their parents. In the case of young brides it is never thought probable, as it is in this country, that a child may be born about a year after the marriage. I am satisfied that there is little difference between Syria and Ireland as to the age of puberty.

" I am not alone in this opinion. It is that of all foreign residents who have given attention to the subject. Dr. Paulding, after having a large practice for several years among all classes in Damascus, told me that he did not believe there is six months difference between the average age of puberty in Syria and in the United States.

" The chief cause of such very early marriages is the entire want of confidence in the virtue of the women. They are uneducated, treated as inferiors, and regarded as inferior to men both in intelligence and moral principle. The earliest marriages take place in the cities; and in the cities there is most jealousy and most licentiousness, and the women are most secluded, confined, and distrusted.

" The common practice is to nurse the infant from two to three years; but of course circumstances sometimes oblige a mother to wean her child before it is two years old, and a child is frequently nursed more than three years. One frequently sees a child running to its mother and asking for suck; and I have often seen a woman take a child from her breast, set it on its feet on the floor, and send it on an errand to another part of the house.

" The mortality among children always seemed to me very great. It is due partly to the want of medical aid in case of sickness, and partly to ignorance about the proper management of children in respect of food, clothing, air, and exercise.

" Families in the East, even among Christians who do not practise polygamy, are smaller on the average than in this country. Among the Mahommedans both divorce and polygamy are common, and the average number of children to each woman is certainly very small. The

population of Syria has been long diminishing, and is not now a fifth of what it was in some former periods. But the smallness of families is only one of the causes of this decline of population.

" In most cities of the sea coast of the Levant there are now found educated European medical practitioners, generally Frenchmen or Italians, or the descendants of Frenchmen or Italians. The natives, and especially the native Christians, have begun to avail themselves to a considerable extent, of the skill of such men, except in midwifery cases. The prejudice against employing men in such cases is strong, and is hardly yet at all weakened. In places in the interior European medical men are seldom found.

" What I have stated in this paper refers especially to Syria and Asia Minor, but it applies, I believe, almost equally to Arabia, Egypt, and the whole north coast of Africa, and also to Persia.

" I should add that the Syrian women, of all religions, put great faith in various charms, both in cases of childbirth and in cases of the sickness of children."

Gentlemen, I regret to say the year now come to a close with us as a society has not been one of uninterrupted prosperity : the evils common to humanity have fallen upon us, and we have to deplore the loss of many useful members. It is sad to see the infant babe weeping and sobbing o'er its mother's grave ! Sad is the sight of widowed, childless age ! It's pitiful to see the blooming bride, that promise gave of many a happy day, touched by decay, turn pale, and die ! But to my mind, saddest of all is it to see the strong man, in the vigour of health and life, struck down by disease, and hurried away from a disconsolate wife and a helpless family, at a moment when he seemed about to realize a life-long cherished dream, the hope that affluence and ease were at length within his grasp.

During the Session 1863–4, we have to deplore the loss, by death, of five members and one associate. Dr. Johns, one of our Honorary Presidents, and one of the most indefatigable members of the profession, has been suddenly taken away, just as he seemed likely to reap the fruits of many years of toil and trouble. Dr. Speedy, one of our Honorary Members, has also been unexpectedly struck down, to the inexpressible grief of his family, after a life of professional labour, respected and beloved by all. Dr. M'Munn, one of the oldest and most highly esteemed general practitioners in the city, has ceased to exist. Dr. Bagot and Dr. Barker, both members at the beginning of the session, are now no longer in the land of the living. And last we have to mourn the loss of one of our associates, Mr. Young, Assistant Midwifery Pupil at Steevens' Hospital.

On two occasions the usual meetings of the society were postponed, on account of the death of Drs. Mayne and Johns.

Dr. Mayne was not a member of the society ; but his kind and generous disposition had so won upon every member of the profession that even had

we met at the time of his death, we could not have carried on the meeting, our thoughts and affections would not have been here, but with the departed form of our beloved friend.

I have yet to name my successor to this high post of honour; and when the name unanimously selected by the Council of the society is mentioned, I feel assured that my esteemed and learned friend Dr. Churchill will be chosen by acclamation. Allow me to say that we have been influenced in our choice not only by his private and personal worth, but by his wide-world fame as a writer. In thus honouring him, we are adding new lustre to our society; and I feel assured, if the society has in any degree prospered in the year that is past, it will attain to a still higher position under the guidance of one so universally and deservedly esteemed, both in public and private.

Dr. Banon read a paper on the *Treatment of Vesico-Vaginal Fistula*, published at page 30.—17*th* Dec., 1864.

A Case in which Premature Labour was Induced by the Use of Fluid Dilators. By George H. Kidd, M.D., F.R.C.S.I., Assist. Physician to the Coombe Lying-in Hospital, &c.

The "parturition history" of the patient whose case I am about to detail, presents many features of great interest. The first three of her labours took place under the superintendence of Dr. M'Clintock, and the third of these labours is one of those on which his very valuable paper, read before the Obstetrical Society of London—"On Turning in Cases of Disproportion"—is founded. I am indebted to him for the notes of these labours. She has had three labours subsequent to these, and, during them, was under our observation in the Coombe Lying-in Hospital. The history of these is also important with reference to the question of turning, but it is to the mode adopted for inducing premature labour in her last pregnancy that I would at present ask attention. I shall first read Dr. M'Clintock's abstract of his notes of her early labours :—

" F. K. delivered of first child, a boy, December 16, 1856, under chloroform, by perforator and crotchet ; great difficulty in the operation (which lasted one hour and a half), from the head being above the brim, and the conjugate diameter contracted ; recovered well, but subsequently got an attack of pelvic cellulitis of the right side.

" Delivered of second child 1st April, 1858, after a labour of forty-two hours ; breech presentation ; child, a boy, dead born. When under chloroform, a leg was brought down, and the child thereby extracted; recovered.

" Delivered of third child 12th November, 1859, after a labour of about fifty-six hours duration, during the greater part of which time she

was at home (under care of Surgeon Dirham, who got Dr. Churchill to see her). On admission she had strong pains, the waters were discharged, pulse 110 ; she was screaming out with excitement and pain, which she referred chiefly to the back ; breech very high up ; sacral promontory unusually accessible. She was put fully under chloroform, and a leg (left) was brought down without any trouble, but immense difficulty was experienced in extracting the arms and head ; the child was a very large male ; it came through the vulva with a strong jerk, which snapped across the funis, about four inches from the naval ; the fetus was pale and placid, but the heart pulsated. In the course of a few minutes respiration was brought about by the 'ready method,' warm bath, and restoratives. She and child left hospital well on ninth day. This child was alive and well in April, 1862, when her husband came to tell me she was again in labour, and as the hospital was at that time closed, I sent her to you for admission to Coombe. Of that (fourth) labour, I need not tell *you* the history.—A. H. M'C."

The fourth labour took place in the Coombe Lying-in Hospital. She had been in labour for many hours before admission ; when examined, the os was found to be well dilated ; the head had not, however, passed through it, being prevented from entering the pelvis by the great prominence of the promontory of the sacrum, and consequent narrowness of the antero-posterior diameter of the brim. The constitutional symptoms urgently demanded delivery, and Dr. Sawyer tried to accomplish this by means of Churchill's forceps. He succeeded in applying the instrument, but the head was so high up that the lock of the forceps, and a great part of the handle, were in the vagina, and we did not deem it prudent to attempt delivery with this instrument, nor did it appear that it would have been possible. The forceps was now withdrawn, and the hand passed into the uterus, one leg seized, and the child turned ; very great difficulty was experienced in bringing the head through the pelvis ; and though the heart was feebly pulsating when the child was born, all our efforts to establish respiration failed. The child was a male ; the mother made a good recovery.

On a full consideration of the case we advised her, if she should again become pregnant, to come into the hospital when she was about seven and a half months pregnant, that premature labour might be induced ; and in the beginning of May, 1863, she applied to us for that purpose. This was her fifth pregnancy, and on the 29th May the vaginal douche of Kiwisch was applied, as modified by Dr. Sinclair, who kindly assisted us. The douche was used for about fifteen minutes, and caused very marked collapse ; it was used once only, but labour soon set in ; the pains, however, were very languid, and at long intervals, so that the os was not dilated till the fifth day from the operation. The child, a male,

presented with the breech; the second stage was short, and accomplished without difficulty; the heart was pulsating feebly at birth, but respiration was not established. The mother's recovery was slow; there was great debility, though there had been no loss of blood; for several days she had great pain and tenderness over the uterus and iliac regions.

Early in November last this woman again applied for admission into the hospital. She was then in her sixth pregnancy, her last menstruation having ceased on the 29th of March. She was admitted into hospital on the 22nd of November, and we proceeded to induce labour on the 24th, this being the 240th day from the termination of the last menstruation. Assisted by Dr. Ringland, I introduced the smallest of Dr. Barnes' dilators at 12 o'clock on that day, filled it gradually, and in half an hour withdrew it, and introduced the second size. I filled this gradually, and left it in for three hours, during which there were frequent labour pains; when I removed it the os was as large as a five-shilling piece, and the membranes filled well during each pain. The labour seemed fully established, and as there was no apparent reason for hastening the delivery, I did not introduce the largest-sized dilator. After this the pains became irregular and feeble; a stimulating enema was given that night, but without any beneficial effect. Next day (the 29th) the labour made little progress; at 8, p.m., she had a violent rigor; and at 2, a.m., next morning, she became so much excited that Dr. Ringland, who saw her, gave her a full opiate. She slept after this, and in the morning the second stage of labour set in, and she was delivered, at 9, a.m., of a rather large sized dead male child; the head presented, and its passage through the pelvis was not difficult. The mother made a good recovery, and left the hospital on the ninth day.

Dr. Barnes' dilators are fiddle-shaped, caoutchouc bags of three sizes, which are introduced, in a flaccid state, by means of the uterine sound, within the os and cervix uteri, and then distended with water by means of a syringe.

Before discussing the merits of this plan of inducing premature labour, it will be convenient to glance briefly at the various other methods that have been used for the purpose. It has been attempted to induce labour by abdominal frictions, by baths, by irritating injections thrown into the rectum, administering ergot of rye and emmenagogues, applying galvanism as proposed by Herder and Radford, stimulating the breasts by cupping glasses and various irritants as proposed by Scanzoni, and, as also proposed by him in connexion with the discovery of Brown-Séquard that carbonic acid gas has the power of stimulating unstriped muscular fibre to contract, by the injection of this gas into the vagina. To these methods it may be objected that they are of very uncertain efficacy, and not unattended with danger to the mother and child. Scanzoni has himself recorded instances of death from the injection of carbonic acid gas into

the vagina. Puncturing the membranes is the method in most general use hitherto, and is no doubt a very efficient one, but the time that elapses before labour ensues is very uncertain, varying from a few minutes to two or three days—sometimes extending to one or two weeks, and the life of the child is imperilled by the loss of the liquor amnii. To obviate this, Hopkins, Meissner of Leipsic, and others, have proposed to puncture the membranes high up, so as to allow the fluid to escape gradually, and let some of it be retained to protect the child and placenta from undue pressure, and at the same time assist in the dilatation of the os. The operation is not, however, free from the risk of separating or wounding the placenta, and thereby inducing hemorrhage or injuring the child, and the period at which labour occurs is still more uncertain than when the direct puncture is used.

Separating the membranes from the cervix and lower part of the uterus, as proposed by Hamilton, is not so certain to induce labour as puncturing them; but by this plan the child is saved from undue pressure, and by placing a catgut bougie, or other foreign body, within the uterus, between it and the membranes, as suggested by Braun, the labour is brought on with more rapidity; but even with this addition the method is tedious and uncertain.

Mechanical dilatation of the vagina by plugging, or by the introduction of a bladder or caoutchouc vessel, such as the colpeurynter of Braun, and distending it with fluid, will sometimes induce labour. The colpeurynter is said by Stoltz to have been used five times in cases of narrowing of the pelvis, and without success in any; but of twelve cases of sickness during pregnancy where it was used, it succeeded in a few, probably because there was already a tendency to labour.

Injections of water into the vagina, as proposed by Kiwisch, in 1846, or into the cavity of the uterus, as proposed originally by Schweighaüser, in 1825, and revived by Cohen, of Hamburg, in 1846, seemed likely at one time to supersede all other methods of inducing premature labour, but have not been found as safe and certain in their action as was at first expected. Though often confounded, the two operations are essentially different; that of Kiwisch consists in the injection of a large quantity of water into the vagina, and against the os uteri, whereby the vagina is mechanically distended, the mucous plug washed out of the os, and possibly the membranes slightly detached from the cervix. In Cohen's plan the injection is thrown into the cavity of the uterus itself, a tube being passed into the os, the membranes partially detached, and a few ounces of fluid thrown in and left there. Of these operations the intra-uterine is the most certain in its effects, one injection generally inducing labour within about 70 hours; whereas the vaginal douche of Kiwisch often requires to be repeated at intervals of 5 or 6 hours for several days. Stoltz states, on the authority of Krauze, that in 81 cases in which the

vaginal douche was employed, it succeeded in 68 ; in 13 it was necessary to have recourse to other measures—29 children were born alive, and 26 dead. Lazzati, Director of the Obstetrical School at Milan, states that in 36 cases in which he used Kiwisch's douche, 12 mothers died, and 13 children were still-born. M. Depaul has communicated to the *Sociétié de Chirurgie* a case of sudden death that occurred in his practice during the administration of a uterine douche. Mr. Salmon has published another fatal case, and MM. Blot and Taurin have each of them seen a sudden death under similar circumstances. Depaul performed the Cesarean section immediately after the death of the mother, in his case, and in doing so observed a quantity of air escape when he divided certain parts, from which he concluded that death was caused by air having been forced into the uterine sinuses, which is probably the true explanation of all these deaths; and though the use of a perfect and well-devised apparatus may lessen the risk of this accident, it seems impossible to avoid it altogether, as even the air dissolved in the water has, there is reason to believe, separated from it, and made its way into the veins and caused death in some cases. Intra-uterine injections are, of course, even more open to this objection than the vaginal douche, and may, besides, give rise to embolism, by forcing clots or shreds of membrane into the uterine sinuses.

Mechanical dilatation of the os and cervix uteri is the last method I have to speak of. Various instruments have been devised for dilating the os, from the three-bladed metallic dilator of Busch, to tents of prepared sponge, of gentian root, and of sea tangle; but the metallic dilators are dangerous and inefficient; and expanding tents, though they may be useful as auxiliaries, have been superseded for inducing labour by caoutchouc dilators. The use of elastic bags distended with water, for expanding narrow passages, was first suggested by Arnott, and a bitter controversy was for some time carried on as to who first applied the principle to the dilatation of the os uteri. Into this I shall not enter, but content myself with remarking, that while all acknowledge the idea to have been suggested by Arnott, Dr. Keiller, in Edinburgh, Dr. Storer, in Philadelphia, and Drs. Tarnier and Blot, in Paris, were engaged at the same time, but unknown to one another, in working it out; and that Mr. Jardine Murray, of Brighton, who had been an assistant to Dr. Keiller, published the first case in which it had been tried, acknowledging, however, that he had received the suggestion from Dr. Keiller. It must be admitted that it is to Dr. Barnes we are indebted for fairly working the subject out, improving the apparatus, and bringing it prominently before the profession. Dr. Keiller used air for dilating the elastic bags, to which it is objected that if the bag should burst the air might pass into the uterine sinuses. Dr. Storer used water as a dilating material, and proposed to make the dilator act from within the uterus. Drs. Tarnier and Blot also make the

instrument act from within the uterus, and use water to expand it; and Dr. Barnes makes his dilators to act on the whole length of the cervix, as well as from within the uterus, and gives them such a shape as to make them retain their places, and uses water for expanding them.

It is evident that the caoutchouc dilators are free from nearly all the objections that have been urged against the other methods of inducing labour. Their smooth and yielding surface is little liable to injure the uterus; there is no possibility, unless they should burst, of air or fluid being driven into the uterine sinuses; they do not absorb the secretions and become putrid or irritating, as sponges may do; and, the most important feature of all, in cases where it seems necessary, delivery may be accomplished by their aid in a much shorter time than by any other means. In the case I have detailed the child might have been turned by the bi-manual method of Braxton Hicks, and extracted in four hours, or even less, from the first introduction of the instrument; and cases are recorded where this has actually been done.

The dilators may be used for other purposes besides inducing delivery. In a case of vaginismus in a newly-married woman, I dilated the vagina to the fullest extent with the largest-sized bag, after which there was no return of the spasm; and in a case of chronic partial inversion of the uterus, I was enabled to dilate the os, and at the same time compress the inverted fundus by packing the small-sized dilator round the fundus, and within the os, and then filling it with water. For exploring the interior of the uterus, and for getting access to intra-uterine polypi, I believe they may also be most useful, care being taken to make the dilatation very gradually. Dr. Barnes has recorded a case of rigid os from cancerous deposit in it, where he overcame the rigidity and accomplished the safe delivery of the patient by the use, in a great degree, of these dilators; and in cases of the more common rigidity, from the too early rupture of the membranes, I believe the place of the bag of the waters may be advantageously supplied by one of these elastic bags. Dr. Barnes and others have recorded cases of convulsions and of uremia in which they have been used with advantage for expediting delivery.

With respect to the death of the child in the case I now record, I confess I am at a loss to account for it. I believe it occurred at the time of the rigor, on the evening of the 29th. Up to this time the child was certainly alive. The second stage of labour had not then commenced; the membranes were not broken, the pains were feeble, and there was no pressure on the child or placenta. I believe the death cannot be charged against the mode in which labour was induced. On the contrary, should I have to treat this woman again, I would be led by the knowledge of the liability of the child to die to use the largest dilator, and urge on the delivery as quickly as I could.—*14th Jan.*, 1865.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

DR. BEATTY, President.

THE first meeting of this society was held 21st December, 1864, in the council hall of the new college erected in Kildare-street. On taking the chair, the President (Dr. Beatty) delivered an inaugural address, in which he explained that this society was identical with that long known as "The Association of the Fellows and Licentiates of the King and Queen's College of Physicians," but with a changed name to connect it more closely with the college. He then traced the history of the old association from its foundation in 1816, and its first meetings held in the back room of a bookseller's shop in College-green, till the present day. The Transactions of the Association, he said, were at first published separately, and formed six volumes; but since the establishment of this Journal they have appeared in its pages. Dr. Beatty congratulated the society on the magnificent hall in which they met, and stated that, though the college had long felt the inappropriateness of the college meetings being held in Sir P. Dun's Hospital, and wished to build a new hall, "it remained for the broad intelligent mind of the late President, Dr. Corrigan, to point out how this long-desired object could be accomplished."

After some further remarks, the President called on PROFESSOR HAUGHTON for the following paper :—

On the Specific Gravity of Urine.—The specific gravity of a complex fluid, such as urine, is an indication of the total quantity of solids dissolved in it, and can only be used as an indication of the quantity of any particular constituent, when that constituent exceeds greatly in amount any of the others. Even in such cases the specific gravity gives only a rough indication, and the only apology for its use is the undoubted fact, that the practical physician has neither leisure nor means for more accurate investigations.

With the view of aiding in the bedside study of disease, by an examination of the daily urine, I have collected many specimens of urine, and have compared their specific gravities with their quantities of urea and sugar, ascertained by the usual, though more laborious, chemical processes; and I have deduced from this comparison two practical rules, which may be used with the aid of the urinometer only.

I.—*Determination of Urea.*—The following table contains my results, founded on specimens of urine, both healthy and diseased, in which neither sugar nor albumen were present :—

TABLE I.—URINE.

Relation of Specific Gravity to Urea.

No.	Specific Gravity.	Grains of Urea per Pint of Urine
1	1003·54	33
2	1003·94	37
3	1004·04	38
4	1005·04	43
5	1011·00	110
6	1011·00	106
7	1012·41	130
8	1014·00	105
9	1014·76	142
10	1015·23	140
11	1015·50	196
12	1015·80	220
13	1017·17	157
14	1018·50	248
15	1019·00	202
16	1023·80	274
17	1024·80	236
18	1025·36	276
19	1028·20	280
Mean,	**1014·899**	**156·47**

From the preceding table we may establish the following approximate bedside rule :—

Rule for finding urea from specific gravity.—*Subtract* 1000 *from the specific gravity, and multiply the difference by* 10 ; *the result gives the number of grains of urea in a pint of the urine.*

Strictly speaking, this result should be increased in the proportion of 149 to 156 ; but in practice this correction may be omitted.

This rule possesses a value even in cases where the urea can be found by more accurate chemical methods, for it establishes a standard proportion between specific gravity and urea which cannot be deviated from considerably with safety.

If the urea be much in excess of that calculated by the rule, we may be certain that there is a serious deficiency of the accompanying salts ; and if, on the other hand, it be much in defect, we may reckon with equal certainty on an excess of other salts.

II.—*Determination of Sugar.*—When sugar is present in large quantity in urine its amount may be found approximately by means of the specific gravity of the fluid, for the sugar in such cases largely exceeds all the other constituents.

The following table contains a comparison of the specific gravities of diabetic urine, with the quantities of sugar contained in it, as found by accurate chemical methods :—

TABLE II.—URINE.

Relation of Specific Gravity to Sugar.

No.	Specific Gravity	Grains of Sugar per Pint of Urine
1	1007·7	24
2	1029·3	437
3	1031·8	672
4	1033·1	546
5	1033·8	672
6	1033·8	624
7	1034·0	624
8	1035·0	818
9	1035·4	728
10	1035·7	672
11	1035·9	728
12	1038·1	640
13	1038·3	796
14	1040·1	796
15	1040·2	794
16	1040·6	794
Mean,	**1033·92**	**660·3** grs.

From this table the following bedside rule is deduced :—

Rule for finding sugar from specific gravity.—*Subtract* 1000 *from the specific gravity, and multiply the difference by* 20 ; *the result gives the number of grains of sugar in a pint of the urine.*

TRANSACTIONS OF THE COUNTY AND CITY OF CORK MEDICAL AND SURGICAL SOCIETY.[a]

SESSION 1864-65.

DR. JOHN BAIN, President.

Fracture of the Skull and Laceration of the Brain. DR. FRANCIS BULLEN Senior Surgeon Mercy Hospital, and Assistant Surgeon North Infirmary, exhibited the brain of a young man, aged nineteen years, who fell from a window, forty feet high; there was a clot in the cerebrum and extravasation of blood into the lateral ventricles, also rupture of the cerebellum, caused by fracture of the base of the skull.—*12th October,* 1864.

Fibrous Tumour of the Palate. DR. F. BULLEN exhibited, also, a fibrous tumour, the size of an egg, which he had removed, at the Mercy Hospital, from a young man, aged twenty-two years, which had grown from the palate down the throat, near to the epiglottis, causing great difficulty of breathing and swallowing; the patient perceived it about eighteen months previous, after a severe cold, brought on by exposure to damp. It was removed by one long incision anteriorly, and then by digital manipulation. The patient recovered in a short time.—*12th October,* 1864.

Case of Aneurism of Thoracic Aorta Opening into the Right Pleura. By THOMAS BLATHERWICK, M.R.C.S. Eng., Staff Surgeon 20th Depôt Battalion.

Thomas Green, 27th Regiment, aged thirty years, a stout, well-formed soldier, who, with the exception of the ordinary milder forms of disease incidental to tropical service, had enjoyed good health, suffered during present year from syphilis Was admitted to hospital, at Kinsale, on 28th September, with symptoms of bronchitis: pain and tenderness of chest, dyspnea, fever, and cough. Improved until 5th of October, when he was attacked by symptoms of suffocative catarrh, with profuse expectoration of thick paste-coloured and glairy mucus; much dyspnea and depression. On 19th October he was admitted to hospital at Cork; symptoms—great pallor and debility, great anxiety depicted on the face, breathing stridulous, pulse small and quick, extremities rather cold, and there was a bluish hue with much moisture on the skin. Between the third and fourth ribs on the left side of the sternum a pulsating tumour was visible, it imparted a thrilling sensation to the hand; a loud murmur was heard on applying the stethoscope.

The physical indications of the right lung, on the anterior examination,

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[a] These reports are supplied by Dr. David Cremen, M.B., T.C.D., Secretary to the Society.

appeared to be natural; in the left lung the respiration was attended by a moist sound, inspiration being imperfectly performed. He suffered from attacks of urgent and increasing dyspnea, the pulse increasing in rapidity and diminishing in volume; extremities became cold and blue, the lips white, and he died, at twelve o'clock, on the 23rd, from apnea, indicative of general effusion on the chest.

Sectio Cadaveris—Thorax.—On raising the sternum the right lung was seen extending over to the left side, the left lung was not seen, but the anterior mediastinum appeared to occupy its place anteriorly; and, on examination, it was found that a dilated pericardium, surmounted by a large tumour, occupied the anterior, middle, and left of the thorax. The left lung was found to be compressed, by the tumour referred to, into the posterior part of the chest, and it was surrounded by an effusion into the pleural sac of about sixteen ounces of clear serum. Serum was found in the right pleural cavity also; sixteen ounces were removed from the anterior part; this was tolerably clear; then sixteen ounces, deeply tinged and mixed with blood, were removed; and, finally, upwards of sixteen ounces of coagulated blood were removed from the lower and posterior part of that cavity. The larynx having been raised, we proceeded to remove the entire contents of the thorax; and, in dissecting down the spinal column, for this purpose, the scalpel unavoidably cut into an aneurismal sac which had contracted intimate adhesions to the dorsal vertebra. On removing the thoracic viscera, the left lung was found to be consolidated from congestion, evidently resulting from external pressure; its colour was purple, much blood exuding on section, with some air. There was no tubercle or pus, and the lung was not hepatized by interstitial effusion; the right lung was healthy. On passing the finger into the opening made by the scalpel, the arch of the aorta was reached, and that vessel was laid open to the end of its thoracic portion. An enormous sac occupied the situation of the arch, it was filled with firm masses of fibrine. On raising the lungs, a tumour was seen protruding from the posterior mediastinum on either side, more especially on the right, where, with the effusion already referred to, it had had the effect of tilting the lung forwards. At the base of the right lung, where the pleura is reflected anteriorly on to the diaphragm, a lesion existed in that membrane covering the tumour, and from this point the hemorrhage into the pleural cavity had occurred. On slitting up the tumour, it was found to contain blood partly fluid and partly coagulated; and on removing the latter, and tracing its internal communications, it was found to extend upwards, and to be connected with the aneurismal sac at the arch of the aorta by a lesion of half-an-inch diameter, situated at the posterior part of the arch, just beyond the origin of the left subclavian artery.—*26th October,* 1864.

Fever, Complicated with Inflammation of the Lungs and of the Membranes

of the Brain.—Dr. BLATHERWICK detailed this case, and described the appearances found after death.—26*th October*, 1864.

On Rheumatism.   By Dr. CUMMINS.

On the 22nd of last August I was called to attend a lady, aged about fifty-five, who had been my patient some years before, on one or two occasions, for attacks of rheumatic neuralgia of the head and neck. She had never suffered from acute rheumatism at any period of her life, and with the exceptions mentioned had enjoyed good health.

Her present illness had commenced about a fortnight before I saw her, and she had, I believe, been proceeding favourably through an attack of acute or sub-acute rheumatism, under the care of her apothecary, when an unusual complication occurred, which led to her being transferred to me. I found her very feeble, with profuse acid perspirations; scanty acid urine, depositing lithates freely; swelling; pain and redness in the joints of the fingers, toes, and contiguous structures; severe pain in the muscles of the head and posterior part of neck; and a hard painful swelling along the course of the great vessels of the calf of right leg and thigh. This induration was knotty and irregular, and seemed to depend upon inflammation of the lymphatic vessels and glands, with copious fibrinous deposit within and around them.

About the junction of the middle and lower thirds of the thigh, where the swelling was greatest, there appeared a superficial blush of redness which seemed to threaten suppuration. There was no œdematous enlargement of the limb, and no source of irritation in the foot beyond rheumatic inflammation of the articulations of the toes. The heart was free from disease; pulse full, about 100; tongue covered with a greyish coat. I prescribed anodyne fomentations to the affected parts, and thirty grains of bi-carb. potass. with five minims of vinum colchici every third hour.

On visiting my patient, next day, I ascertained that she had spent a good night, and had slept without an opiate which she had previously been taking; she expressed herself much relieved, and there was a decided improvement in the condition of the joints and the state of the urine.

The sour perspirations still continued to be profuse, and the inflammation and fibrinous deposit had spread upwards, and now involved the inguinal lymphatic glands, so that from the middle of the calf of the leg to the groin there extended a continuous hard painful swelling, which felt like a piece of knotted rope, stretched from one part to the other, most knotted at its centre and upper end. On the whole, however, there was less pain and tenderness, and less appearance of pending suppuration than the day before; and being aware of the fact, that parts affected by rheumatism rarely suppurate, however closely they may simulate the forming of an abscess, I began to feel more easy about my patient.

The colchicum was now omitted, and the alkaline mixture and fomentations continued as before.

24th.—Patient continues to improve, swelling much diminished. Pergat.

25th.—The induration and swelling of leg and thigh have disappeared, and pain has ceased ; the joints are also restored to their natural state, while the heart continues free, and the general condition of the patient has much improved ; diaphoresis is still excessive, although diminished. I now reduced the dose of alkali to half, as it had produced some nausea, and its further use in large quantities did not seem necessary.

29th.—Patient has progressed favourably, but complains that the perspirations weaken her much. A pill, composed of pil. hydrarg. with extract of colchicum, was ordered to be taken every second night, and an aperient saline mixture when necessary. The alkali to be continued in half doses.

30th.—On this day ten minims of lq. potassæ, with a grain and half of iod. potassium, repeated thrice a day, were substituted for the alkaline mixture, and under their use she continued to improve, and was able to get up and lie on a sofa, but in a few days the lymphatics of the left thigh became affected, as the right had been previously, and on the following day the right was also attacked as before, but less severely ; coincidently with these unfavourable symptoms there was a return of inflammation of the joints of the left thumb, while the left shoulder and right articulation of lower jaw had also become swollen and painful. The anodyne fomentations and potash mixture had to be resumed, and were used regularly for a few days, when, all local affections having passed away, bitter tonics, with alkalies and quinine, were put in requisition, and continued until convalescence, which was not long deferred, was perfectly established.

Since my last paper on acute rheumatism was read before this society, I have treated six cases of the disease on what is called the alkaline plan, and in every case with marked success, the disease yielding with wonderful rapidity in all, and the heart remaining unaffected in five out of the six. The exceptional case of cardiac complication occurred in the person of a young man who had never had rheumatism before. I saw him on the second day of his illness, when, with slight palpitation and uneasiness of left side, there was a marked endocardial murmur, which continued permanently, although in other respects he made a rapid recovery.

In one of the cases alluded to, also, the disease returned before the patient, although up and about, was perfectly convalescent. This I attributed to her having joined her family, at Christmas festivities, and caught cold. The relapse did not yield as rapidly or as perfectly to the alkaline treatment as the primary affection had done ; but, on the contrary, lingered on, in a sub-acute form, for several weeks ; requiring colchicum, iodide of potassium, and the Turkish bath for its final removal

from the system.   The pathology of rheumatism, as now established by experiment and observation, leads us to look upon its treatment by alkalies and eliminatives as the most rational that can be adopted ; and experience of its utility at the bed-side, by confirming the inferences drawn from pathological research in the instance of this disease, opens up a new point of view from which to look at diseases which depend upon the circulation in the blood of a materies morbi.   Up to a recent period rheumatic fever was treated, blindly, by specifics and palliatives, or allowed to run its course as other fevers still are.   Drs. Prout, Richardson, and Todd, have discovered the nature of the poison which caused it, and thus taught us how to neutralize it.   May we not look upon this as the first dawning of the day when the essence of all febrile and exanthematous diseases will be fully understood and accurately treated.[a]

But my chief object in bringing this subject under your notice is to place on record the very unusual complication of rheumatism presented by the first case I have mentioned.   The seat of the complications which arise in the course of rheumatic fever is generally the albuminous and gelatinous textures, which, in virtue of their affinity for lactic acid, as Dr. Fuller conjectures, attract the poison towards them ; but besides the fibrous and serous membranes of the joints, heart, brain, lungs, intestines, spinal marrow, eye, and bones, recorded instances have been collected by Dr. Fuller, in his complete work on rheumatism, of the substance of the heart itself, the parenchyma of the lungs, the liver, skin, and muscles, being thus affected ; but in this category of structures liable to rheumaitsm, no mention is made of the absorbents, nor can I find any such in the various authorities to which I have access.   As far as I am aware, then, my case is unique in this particular, and, as such, is interesting to the pathologist and clinical observer.—*9th November*, 1864.

Sudden Death.—Staff Assistant Surgeon Sparrow read a report of the case of a man, aged twenty-four, who had died suddenly.   A minute examination of the body and analysis of the contents of the stomach failed to show the cause of death.—*November 23rd*, 1864.

Malignant Scarlatina.—Dr. Luther read the notes of a case of scarlatina which commenced with vomiting and great pain in the back, and proved fatal on the third day.—*November 23rd*, 1864.

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[a] A change has already taken place in the treatment of fevers, as the mineral acids are now generally prescribed during their course, not only with a view to obviating complications, or treating symptoms, but to correct a morbidly alkaline condition of the blood. The various analyses made by our learned friend, Dr. Popham, of the excreta of fever patients, some of them published in our Transactions, have shown that it is not only when retained urea has been decomposed into carbonate of ammonia that the blood is super-alkaline, but that it is so, sometimes at least, from the very first.

CLINICAL RECORDS.

A Case of Aneurism of the Celiac Axis. By Leo. Kidd, M.B., T.C.D., Assistant-Surgeon 27th Inniskillings, in Medical Charge of the Convalescent Depôt for European Troops, Darjeeling, India.

Sergeant W. S., 2nd Dragoon Guards ; age last birth-day, thirty-three ; completed seventeen years of service. Station, Darjeeling. Time on station, fifteen days. Lumbago—Aneurism.

Particulars of Case and Prescriptions.—May 2nd, sixtieth day of disease. A man of small frame ; brown hair ; hazel eyes. Six and a-half years service in India. A sergeant in regimental band ; played cornet. Arrived here from Benares on 4th April, "being subject to dyspepsia—not much in hospital, but debilitated during hot season."[a] Admitted into hospital on 19th ult., complaining of pain in the back, chiefly in the left lumbar region ; pretty easy during the day, but giving him great annoyance at night. Nothing was detected on examination which could account for the pain. Urine natural. Bowels acting daily. No fever. He has been treated with counter-irritant liniment and blisters ; and internally, tincture of the sesquichloride of iron, fifteen minims in an ounce of the infusion of quassia three times a day. This was continued until 1st May, on which day he was ordered :—Bismuth and carbonate of magnesia, of each, gr. 40 ; morphia, gr. 1 ; tincture of gentian, $\mathrec{3}$ ss. ; powdered gum arabic, $\mathrec{3}$ 1 ; infusion of columba, $\mathrec{3}$ ix. ss. ; an ounce to be taken three times a day. A blister to epigastrium on night of 28th April, as he had been complaining of pain in stomach. Altogether his symptoms are anomalous and puzzling.

May 5th, sixty-third day of disease.—Last evening was suffering greatly from pain in left shoulder ; also complained much of pain in abdomen ; not increased by pressure. Ordered morphia, gr. $\frac{1}{2}$, in draught. This morning he is evidently suffering severe pain ; has had little or no sleep. Cannot lie on back or either side without feeling dragging pain. Subject to exacerbation, during which the muscles of abdomen become cramped. States that for about two months back he has been subject to pain in abdomen and back ; does not remember having received any hurt or strain. On careful examination with stethoscope a prolonged bellows-murmur can be heard between the ensiform cartilage and umbilicus, and

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[a] Since patient's death it has been stated that formerly his habits had been intemperate, although he had himself stated the contrary.

for a short distance to both right and left of the vertical line between these two points; abdominal walls thin, and the murmur can be heard on lightest application of stethoscope: heart's sounds natural.　On his standing up the murmur can still be heard, but of altered character—less loud, and having a cooing sound.　When he lies on his face the murmur can also be heard indistinctly in lumbar region, and in this region is probably combined with muscular fremitus in the erect position; it can also be heard on either side about first lumbar vertebra, but subject to same difficulty.　There is neither tumour nor pulsation perceptible in abdomen. Aneurism of abdominal aorta suspected.

Bowels confined; to have a large purgative injection.

Evening.—Bowels freely moved by injection; but he suffered severe pain during the day; relieved by draught containing tincture of opium ℨ ss., chloroform min. v.　Same repeated in evening, and during the night. Blister to epigastrium.

May 6th, sixty-fourth day of disease.—Feels a little easier; slept a little; but face is expressive of great suffering.　Chicken; 2 oz. rum.

May 9th, sixty-seventh day of disease.—Had a pill containing opium gr. 2, last night; draught during the night; but has had a very bad night, suffering much from pain in back.　Murmur not so audible to-day. Chicken; 2 oz. rum.

Evening.—Anodyne draught twice.

May 10th, sixty-eighth day of disease.—Slept rather better last night, but has severe pain in epigastrium this morning.　Bowels not free. Purgative enema.　Milk; 2 oz. rum..

May 12th, seventieth day of disease.—Countenance expressive of great suffering; referred chiefly to epigastrium and over left side of chest. Yesterday he felt some difficulty of swallowing, and complains of same this morning.　Murmur not audible to-day.　Heart's sounds heard feebly in epigastrium, and between that region and umbilicus.　Pulse 116. Received considerable ease last night from an anodyne enema of ℨ 1 tincture of opium.　Diet low; 2 oz. rum.

During the day was much distressed by the difficulty of swallowing, which increased until obstruction became complete.　On taking fluid and attempting to swallow, it would go down a short way (he referred the obstruction to upper part of sternum, and sometimes lower down in epigastrium), and after remaining for a few moments he would be compelled to reject it by an effort, partly retching and partly cough.　A sinapism was applied over sternum, and the anodyne injection ordered as on last night.　Shortly after 9, p.m. the medical officer was hastily summoned, and on arrival found that the patient had just expired.　He had been suffering very much, since evening visit, from dyspnea and internal pain.　The anodyne enema had been administered; he sat up in bed and had a short smoke, but the pain continued severe.　He lay down—the

breathing became laboured, and in a few moments, without spasm or convulsion, or any complaint of increase of pain, he expired.

Post mortem examination, thirteen hours after death.

Body.—Spare, but not emaciated. Countenance calm and blanched.

Head.—Not examined.

Thorax.—On removing sternum thoracic contents were found healthy. Slight adhesions of lungs on both sides, particularly to upper surface of diaphragm, and on left side at apex. Substance of lungs healthy.

Pericardium contained a little clear serum. *Heart* of natural size; all the cavities empty; left ventricle contracted; valves healthy; thoracic aorta healthy.

Abdomen.—Viscera bathed in blood and serum; large masses of coagulated blood between layers of great omentum; a thin layer of blood effused under peritoneal coat of stomach along lesser curvature; bloody clots, and serum free in cavity of pelvis.

On removing lungs and abdominal viscera *en masse*, and laying open the aorta along the posterior surface, a quadrilateral opening sufficient to admit tip of little finger was found on anterior surface, at point of origin of celiac axis, the branches of which could not be distinguished in an aneurismal sac apparently about the size of a hen egg, which had burst and become diffused, producing a large bloody tumour about the size and shape of the two hands applied palm to palm, with fingers slightly flexed, passing upwards along crura of diaphragm, and surrounding and constricting the œsophagus.

Liver.—Healthy and of natural size, extending upwards to between fifth and sixth ribs.

Kidneys.—Healthy.

Intestines.—Healthly; large, containing scybalæ.

No erosion of the vertebræ.

Remarks.—The above case is given exactly as recorded in the hospital Case-book. It presents some features of considerable interest.

1st. From the complete absence of tumour or pulsation, the diagnosis of aneurism was obscured; so that although aneurism of the abdominal aorta was suspected on the 5th of May, the disease was still returned under head of its most prominent symptom, viz., " lumbago," on account of the deficiency in the signs above noted, in the expectation that if the disease were really aneurism these signs would eventually become developed.

2nd. The symptoms indicating bursting of the aneurism agree with those noted by Dr. Law in a case of aneurism communicating with aorta at celiac axis, mentioned by Dr. Stokes in his work on the *Diseases of the Heart and Aorta*, p. 622, so far as cessation of murmur and alteration of pulse are concerned; but rigor was absent, and pulsation never having been detected, there was, of course, no change in this respect. It is not

improbable that on 9th May the first bursting may have occurred, it having been then noted, "murmur not so audible to-day." On the 11th May, as the diffusion may be supposed to have extended, a symptom was superadded, which, so far as I am aware, is new in connexion with the bursting of an abdominal aneurism, viz., dysphagia. On the 12th May, not only had the murmur in epigastrium entirely disappeared, but for it were substituted, "the heart's sounds heard feebly," being most probably directly communicated to the effused clot by the action of the heart; and during this same day the dysphagia having amounted to complete obstruction—which, as was discovered after death, depended upon the large bloody tumour, caused by the diffusion of the aneurism, from the further bursting of which producing the masses of coagulated blood found between layers of great omentum, and the bloody clots and serum free in the cavity of the pelvis—death suddenly resulted.

By the observation of future cases it may be determined how far we should be justified in definitely forming the diagnosis of aneurism of the celiac axis in a case presenting the following features :—

1st. The neuralgic pain without constitutional symptoms.

2nd. Epigastric murmur, without tumour, pulsation, or cardiac disease, as in above case.

But at present there appears to have been ample foundation for the hesitation which existed in decidedly pronouncing the case to have been one of abdominal aneurism.

From the signs which supervened on the bursting of the sac, a new light was thrown on the case, and although of no real value as regards practice, it will be interesting to learn, in future cases, how far the phenomena observed on the bursting of the aneurism in this case may assist in localizing a suspected abdominal aneurism in the celiac axis, viz.: —

1st. Dysphagia.

2nd. Disappearance of epigastric murmur, and substitution of heart's sounds.

Cases Treated at the Dispensary for Skin Diseases, Bishop-street. By Dr. Belcher. (Nomenclature according to Neligan's Classification.)

1. Margaret F., aged about thirty, a servant, and unmarried, was admitted 16th August, 1864, having a complication of *scabies, with eczema.* The scabies was cured by applying a lotion of hyposulphite of lime, which I have always found most useful,[a] but the eczema remained on the neck, body, and arms, for a considerable time afterward. She took a mixture composed of sixty minims of Pearson's solution in six ounces of infusion of dulcamara,

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[a] See a paper of mine on this subject in this Journal, Vol. xxxiii., p. 474.

one ounce twice daily, for some time. Arsenical symptoms soon super-
vened ; and as, after a fair trial, this medicine did not agree with her, it
had to be stopped. Meanwhile she tried all sorts of local applications —
baths of various kinds, diluted citrine ointment, white precipitate oint-
ment, and also the following :—R. unguenti zinci oxydi semi unciam,
pulveris zinci oxydi grana sexaginta ; camphoræ grana triginta ; spiritûs
rectificati drachmam. This proved useful for a time, and then lost its
effect. The excessive itching was greatly moderated by using an oint-
ment of hydrochlorate of ammonia, sixty-four grains to the ounce ; and,
after lengthened perseverance in the internal use of quinia, she was
discharged cured on the 11th November, 1864.

2. Esther T., a married woman, aged about forty, admitted 20th
September, 1864, with *pityriasis capitis*, of long standing. She used the
following sedative lotion :—R. boracis drachmas duas ; acidi hydrocianici
minima quindecem ; aquæ uncias octo M. She also took five minims of
Fowler's solution twice daily, with tincture of cinchona ; and, in addition,
she had a small dose of sulphate of magnesia twice weekly. Arsenical symp-
toms soon supervened, and the disease got perceptibly better. Soon the
dose of Fowler's solution was decreased to *three* minims, twice daily ; and
on the 15th of November she was discharged, cured.

In this, and in the preceding case, the arsenic was taken immediately
after meals ; and it will be observed that in the case of Esther T. the
largest dose intended to be administered was first given, and the quantity
was afterwards diminished.

3. Elizabeth O., a child, aged about twelve, admitted 14th August,
1864, with *eczema impetiginodes* on left external ear, as well as on her
nose, neck, and body. After a few small doses of rhubarb, with mercury
and chalk, and application of the ordinary zinc ointment, a tincture was
made of similar strength and composition to the tinctura iodi of the *Phar-
macopæia*, save that methylated spirit was used as the medium ; and this
was frequently applied to the affected parts with a camel's-hair pencil.
On the 8th November she was discharged cured.

4. John F., a pensioner, aged about forty, admitted 1st November,
1864. I cannot say what his disease should be called ; the symptoms
and appearances were as follow : —

For three years he has had a small ulcer at the right angle of the
mouth, and about three ulcers of like kind on the tongue. The tongue
was very hard and fissured, particularly in the transverse direction, where
one large fissure was found. The first appearance of the ulcers suggested
syphilis as the cause ; but he protested he never had had syphilis, but
that he had been twice affected with gonorrhea, at intervals of some
years. He was perfectly aware of the difference between syphilis and

gonorrhœa, and there was no trace of a primary sore to be seen. He also had been in the habit of smoking a great deal, and always used short, blackened clay pipes, known in some parts of Ireland as *dhudtheens*. The exudation from the ulcers could not conveniently be obtained for microscopic examination, as those on the tongue were always wet with saliva, and that on the mouth was in the same predicament. The choice of diagnosis here lay between cancer and syphilis ; and, assuming his personal statement to be true, it could scarcely be a syphilitic case.

I had the tincture of iodine (prepared as before detailed in Case 3) applied to the surface of the tongue and to the angle of the mouth. The local application in this case had a great advantage, for it was also an internal remedy. Further, he took cod-liver oil diligently. The ulcers healed almost at once ; and, after a few more local applications, the tongue lost its hardness, and the patient's general health wonderfully improved. The last time I saw him (December 9th) he was apparently quite well.

The compound tincture of iodine, prepared with methylated spirit, I have found an excellent local application in cases of skin disease in which there is even fair probability or presumption of constitutional origin.

Case of Rheumatism Treated with Arnica.　By H. S. Purdon, L.R.C.S.I., Belfast.

Anne Dyer, aged fifty, an inmate of the Belfast Charitable Society's Institution, was admitted into the infirmary of that society about six months since, suffering from a severe attack of rheumatism. Before her admission into the institution she had been subject for some time to attacks of this disease, arising, in all probability, from the employment which she followed—being that of a dealer in vegetables. Various remedies were tried from time to time—as opium, colchicum, &c.— but were found to have no effect. I then determined to try the " arnica montana" in the form of tincture, prepared as directed in the *British Pharmacopœia*, and which I have been informed is often prescribed in Germany and America for rheumatism, On November 4th, at my usual visit, the patient complained of great pain in all the large joints, especially the knee-joint, and also of very severe pains in the lumbar mass of muscles. At the side of the right knee I remarked a few small patches of a reddish colour, which I considered to be the "roseola rheumatica" of Bateman. The patient also sweats very much, which has the peculiar acid smell of rheumatism. As the bowels were confined, I ordered some aperient medicines, the knee and shoulder joints to be well covered with flannel, and the following :—℞ Aquæ camphoræ, eight ounces ; tinct. arnicæ, three drachms. A table-spoonful every third hour.

November 8th.—To continue mixture.

11th.—To have twenty drops of tincture of arnica every second hour ;

joint not so much swollen, also the roseola has disappeared. Patient informed me that she feels much better.

14th.—Dose of arnica to be diminished.

24th.—Able to sleep well; pain and swelling of joints much reduced; to discontinue medicine.

The above are the observations which I have made on the first case of rheumatism that I have treated with arnica. The next case that I meet with I hope to be able still further to try the effects of this remedy.

Case of Epithelioma of the Tongue, in which Division of the Gustatory Nerve was followed by unusual Benefit. By M. H. COLLIS, F.R.C.S.I., &c.

Michael Kennedy, aged about fifty, had been for fourteen months the subject of a severe ulceration of the left side of the tongue; this was originally produced by the irritation of a jagged tooth, the first molar in the lower jaw. The ulcer extended from the apex of the tongue back to a line beyond the last molar tooth; it was also broad, occupying not only the side, but the under surface and much of the dorsum of the organ. The teeth indented it deeply, especially the first molar. The submaxillary, and the lymphatic glands about the angle of the jaw, were much enlarged; the ulceration extended slightly to the right of the mesial line, and deep infiltration had occurred in the body of the tongue, giving it a nodulated appearance and a hard feel, such as might have made it difficult to say at first whether the disease was scirrhus or epithelioma, but that the early history clearly pointed to the latter affection. The pain was constant and intense, precluding proper sleep and incapacitating the poor man for any work. This pain had been an early symptom, dating, in fact, from the very commencement of the ulceration, and arriving at a distressing intensity at the beginning of December, 1863. The man had been the rounds of the principal London hospitals, and had suffered much from caustics of various kinds; narcotics of all sorts had been used ineffectually or with but transient benefit. Strange to say, no one had suggested the division of the gustatory nerve as a palliative, although it was just the case for it, the disease being still limited to the region supplied by this nerve. I proposed it to him, and he agreed to it at once. Indeed, his sufferings were so severe that he would have submitted to anything for relief. There was little difficulty in the operation which I performed on Nov. 18th, in the following manner :—Placing him on a chair opposite a good light, I passed my left index finger into the mouth until it rested on the last molar tooth. Then introducing the point of a strong curved bistoury beyond my finger, I made an incision of less than an inch in length along a line running obliquely in the direction of the angle of the jaw. This incision lay about half an inch beyond the last molar tooth, and three-quarters of an

inch below its level. The parts were divided down to the bone. By such a wound the gustatory nerve, and perhaps a few fibres of the mylo-hyoid are divided, as they lie beneath the mucous membrane. The pain of the incision was considerable, but momentary. That night he slept well, for the first time for eleven months enjoying rest unbroken by pain. The ulcer next day was perfectly insensible to the touch and devoid of all pain, and it has so continued up to the present time.

This was only the natural effect which was anticipated. In a few days it became evident that a further and unexpected result was being accomplished. The surface of the ulcer lost its vivid hue, the edges became bright red, and were evidently closing in. In the course of a week the ulcer was reduced considerably in size, and in three weeks the upper surface and side had healed, leaving only a small warty patch on the under surface, raw but not tender.

I removed the obnoxious tooth about the end of the second week, as soon as it was evident that it still would press upon the side of the tongue.

Much pain is now felt over the glands and along the temple, and also along the right side of the tongue. The latter will be removed probably by division of the nerve on that side; the former is probably not to be removed. The great interval of ease which the man has had was well purchased at the expense of this trivial operation. The singular result of the healing of much of the ulceration affords a strong proof of the assistance which freedom from pain confers upon all actions of repair. Much will suggest itself to the thoughtful practitioner in connexion with this observation, which I have thought well to put on record for this very purpose.

The operation of dividing the gustatory was suggested by Hilton, and has been also performed by Mr. C. H. Moore, whose paper on the subject will be found in the *Med. Chir. Transactions*, and an abstract of it in Vol. XXXVI. of this Journal, p. 407.

CONTRIBUTIONS TO PRACTICAL SURGERY. BY WILLIAM STOKES.

JOSEPH LEWIS,

CHROMO LITH

PART I.

ORIGINAL COMMUNICATIONS.

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ART. X.—*Contributions to Practical Surgery.* By WILLIAM
STOKES, M.D., Ch. M. Univ. Dub.; L.R.C.S.I.; Surgeon to
the Meath Hospital and County of Dublin Infirmary; Lecturer
on Anatomy and Physiology in the Carmichael School of
Medicine.

SINCE last September, when I first commenced clinical duty at the
Meath Hospital, a number of cases presenting features of unusual
interest have occurred, many of them requiring prompt operative
interference. I propose in the following pages to notice briefly
those which presented characters rendering their record of value and
interest to the student of surgery.

Operative surgery has of late years made great progress; but,
although this advance is to be attributed, in no small degree, to many
truthful and ardent workers in the schools of the United Kingdom,
we cannot omit giving a just meed of praise to the labours of many
of our distinguished continental colleagues; for example, to those

of Langenbeck, Pirogoff, Esmarck, Schuhe, Nélaton, Ollier, Maison-neuve, and others; and, in ophthalmic operative surgery, to those of Graefe, Arlt, Donders, Desmarres, and many others. I have naturally placed at the head of this list of distinguished names, that of my illustrious friend and teacher, Professor Langenbeck, of Berlin. With his name will now be associated many of the most important improvements that have of late years been made in operative surgery; for example, the osteopalinthesis or osteoplastic operation of the superior maxilla, also the ingenious modifications and improvements in the uranoplastic and Indian rhinoplastic opera-ations. These are only a few of many with which his name is justly connected. In the following observations I wish to draw particular attention to a case in which the last-named of these operations—namely, the Indian rhinoplastic, as modified by Langenbeck—was performed by me; and also to another operation, which I believe is novel in this country, namely, the sub-periosteal resection of the elbow-joint.

I shall commence by adverting to the particulars of the case of Thomas Scally, whose portrait was most successfully taken by Mr. Connolly, both previous to and after the performance of the opera-tion, as shown in the accompanying chromo-lithographs by Mr. Lewis.

I.—*Extirpation of the contents of the Orbit for Lupoid Ulceration engaging the Eyebrow, Eyelids, Conjunctiva, and Cornea of the Right Eye; Indian Rhinoplastia performed.*—Thos. S., aged nineteen, was admitted into the Meath Hospital on August 27th. A glance at the portrait will show the condition of the patient on his admission. The rodent ulceration engaging the eyebrow, lids, ocular con-junctiva, and cornea of the right eye measured, in its transverse diameter, three inches and one-third, and in its vertical diameter two inches. The disease had lasted nearly seven months; it commenced, at the inner angle of the eye, by the formation of a " pimple," which, after remaining without any alteration for fully a month, commenced to spread along the lower lid, towards the outer angle of the eye. The ulcerative process then appeared for a time to be arrested, but soon recommenced at the primary seat of the ulceration, taking, however, an upward course, spreading over the upper eyelid. In less than three weeks the circumference of the ulceration was completed. About eight weeks before the perform-ance of the operation which I had recourse to the sight of the

patient became affected, owing to the ulceration commencing to
spread over the conjunctiva. The sight of the eye was completely
lost in about a fortnight, as far as the power of distinguishing objects
was concerned, but the retina was still sensitive to light, showing
that the deeper structures of the eye were probably unaffected by the
disease. The patient suffered from intense ocular and circum-orbital
pain, and was also much distressed by the continual secretion of a
thin, fetid, purulent discharge from the seat of the ulceration.

The question, then, naturally arose—what was the real nature of
this ulceration? Was it one connected with malignant disease of
any form, or was it the same disease of the ravages of which there were
evidences in the nasal region and in the soft palate? I confess
that at first—bearing in mind the rapidity of the development of
the ulceration, and its general aspect, which resembled so much
unquestionable cancerous ulcerations which I have seen occupying
the same situation—I held the opinion that the ulceration was
cancroid or an epithelioma. After careful microscopical examina-
tion, however, I abandoned this view, and looked at this ulceration
as another and more formidable expression of the same disease that
had at a former period engaged the nasal structures and soft palate.
The lupoid disease previously existing in these situations, and the
age of the patient, militated strongly against the cancerous nature
of the affection. It is true, certainly, that the occurrence of can-
croid disease at an early age has been observed, but these are cases
of extreme rarity. The fact of the rapidity of the extension of the
ulceration was the cause of my not entertaining the idea of its being
that form of ulcer described by Professor Jacob, which is always so
slow in its growth, and which, if not purely cancroid in its nature,
appears to be very closely allied to this form of malignant disease.

Having stated to my patient the view I took of his case, I
recommended him to have this formidable and rapidly extending
ulcer completely removed by the knife. This he willingly con-
sented to; and this procedure was fully sanctioned by my colleagues.
Accordingly, on the 2nd of last September, I proceeded to remove
the entire ulceration, including the contents of the orbit over which it
had spread. The patient being brought fully under the influence of
chloroform, I commenced by making an incision down to the bone,
which completely encircled the entire ulceration. Then, sinking a
large scalpel deeply into the cavity of the orbit, I carried it com-
pletely round, following carefully the line of my first incision, and
seizing the diseased mass with a strong forceps, and drawing it

forcibly forwards, I brought the optic nerve into view, which was divided with a scissors, at about half-an-inch from its entrance into the eye. This being done, the contents of the orbit were almost removed, the operation being completed by a few touches of the scalpel. For some minutes there was very smart hemorrhage, which, however, was easily arrested by compresses. The patient was then carried back to bed, and shortly after was given a strong opiate draught.

It would be tedious and without purpose to give the daily account of the progress of this case after the operation. Suffice it to state that, in the comparatively short period of six weeks, the entire orbital cavity was completely filled up, and the extensive wound cicatrized. This result, which surpassed my most ardent expectations, naturally caused me to direct my attention to the improvement of the nose, which in my patient's early youth had been so much damaged by the ravages of lupus.

On the 26th of last October I performed a complete rhinoplastic operation, adopting Langenbeck's modification of the Indian rhinoplastic.

The object of this operation, which, as my readers are no doubt aware, is to form an organic substitute for the parts which have been either partially or completely destroyed, has hitherto been effected by two operative procedures, namely—the Indian and the Italian rhinoplastic. The late Professor C. von Graefe, the father of the present renowned ophthalmic surgeon in Berlin, was the first who introduced the former of these methods into European surgery. This was the operation which Dieffenbach, during the latter years of his brilliant career, so frequently performed, and which of late Mr. Hamilton has also adopted. Still it cannot be denied that, until a very recent period, no attempt at any real improvement upon the plans of Graefe and Talliacotius has been either practised or even suggested.

In 1859 Langenbeck first performed the periosteal rhinoplastia— that is to say, he transplanted a piece of periosteum from that covering the frontal bone, along with the flap from the same situation, with which to cover the defect—(*Deutsche Klinik*, 1859— *Beiträge zur Osteoplastik*). The next modification was one suggested and put into practice by M. Ollier, of Lyons—(*Gaz. des Hôpit.*, Nov., 1861). He combined the periosteal with osseous transplantation, introducing, namely, into the flap the remains of the right nasal bone and a portion of the nasal process of the superior

maxilla. The object of these osseous and periosteal transplanta-
tions is obviously to give greater firmness, and if possible a greater
elevation, to the nose. Ollier has published the records of three
cases operated on in this manner, and in two of them the result was
favourable; in the third the transplanted bone became necrosed—
(Ollier—*Ostéoplastie Appliquée à la Restauration du Nez*). I
cannot, however, but think that the principle of this operation of
Ollier's is irrational, for the nasal bones and the nasal processes of
the superior maxilla in their natural situation form a most important
lateral support to the soft parts of the nose. Remove the bony
structures forming this, and you deprive the nose of its support
in the situation in which it is most required; and, again,
there is the great risk of the transplanted bone becoming
necrosed. Looking, therefore, at these circumstances, I did not
feel myself justified in performing this operation, preferring rather
to combine the ordinary Indian rhinoplastic with periosteal trans-
plantation from the frontal bone. It is remarkable what a great
fear surgeons have hitherto had of any injury being done to the
periosteum in this operation. Mr. Hamilton, in his excellent essay
on the rhinoplastic operation, observes that in raising the flap " care
should be taken to leave the periosteum untouched, to prevent the
exfoliation of the os frontis." The late Mr. Miller, of Edinburgh,
in his work on the Practice of Surgery, observes, speaking of this
operation:—" In no part of the wound is the pericranium interfered
with." Fritze, in his work, *Die Plastische Chirurgie*, observes:—
" We have to deal, in plastic operations, with the *integument* only."
Mr. Pirrie, the Professor of Surgery in the University of Aberdeen,
remarks:—" The outline of the flap having been marked with ink,
or with a knife, the flap is dissected down, care being taken to make
it of uniform depth, and not to interfere with the pericranium."
And Mr. Coote, in his article on plastic operations, published
in Holmes' *System of Surgery*, observes:—" In plastic surgery
the operator avails himself of the true skin, with the subcutaneous
areolar and fatty tissues; sometimes, likewise, of the mucous
membranes." Mr. Syme, in his paper on the " Restoration of the
Nose," published in his *Clinical Observations in Surgery*, does
not deal with periosteal transplantation in connexion with this
operation; indeed, neither the operation of Talliacotius or the Indian
rhinoplastic find much favour in his eyes, as the former he considers
a " wild scheme," which is " not to be taken into consideration,"
and the Indian or frontal method " very objectionable" for many

reasons, but principally from its being necessarily tucked up between the eyes." What he considers greatly preferable is a truly artificial one of silver or gutta percha, secured in its place by some " adhesive tissue," which, he considers " enables the patient to go into society with a considerable degree of comfort." I confess I have my doubts as to the comfort of a patient in society with a silver nose secured by " adhesive tissue."

In truth, when we consider the sources from which the cranial bones derive their vascular supply, we need not so much fear the deprivation from the os frontis of a portion of its periosteal covering, as this and the other cranial bones derive their means of nutrition and reparation not merely from the periosteum, but also from the dura mater. The case is different when other bones have become deprived of their periosteal covering from injury or suppurative disease. Then we may not unreasonably apprehend the unhappy sequence of partial necrosis of the bone; but even this does not occur so frequently as is commonly supposed. Mr. Humphrey, in his classical work on the Human Skeleton, when speaking of this subject, observes that " the end of the bone in a stump, though it may be bared of periosteum for some distance, does not always necrose. In excising the bones of an elbow-joint, crushed between the buffers of a railway carriage, I left the humerus bare for nearly an inch above the sawn end; but the wound healed up without any further loss of bone. In a little boy the periosteum was detached from the fibula to a considerable extent by suppuration, yet no necrosis took place. A gentleman sustained a severe contused wound on the shin; subsequent events proved the tibia to be exposed, and necrosis was confidently predicted, but he escaped without it."

The results, too, of a series of experiments on the lower animals, which in conjunction with Dr. Robert M'Donnell, I have recently made, with the view of determining the amount of osseous reproductive power of transplanted periosteum, have afforded evidence of the greatest importance, to show how groundless is the usually accepted theory held with regard to the necessary death of the bone after injury to, or partial removal of its fibrous envelope. In none of the animals on which we have made periosteal transplantations have we been able to determine the existence of any necrosis occurring as a sequence to the operation. May we not, therefore, reasonably suppose that, as far as this matter is concerned, what holds good in the lower animals may also hold good in man? I may also add, that in the two operative procedures on man,

combined with periosteal transplantation, namely, the rhinoplastic and the uranoplastic operations (both of which I have repeatedly had opportunities of witnessing), no injurious effect was produced on the bone from which the membrane was removed.

I commenced the operation by dissecting off all the remains of the nose in which lupus had in early life made such ravages. This being removed, I proceeded to dissect off the flap for the formation of the new nose from the forehead. The flap was of this shape.
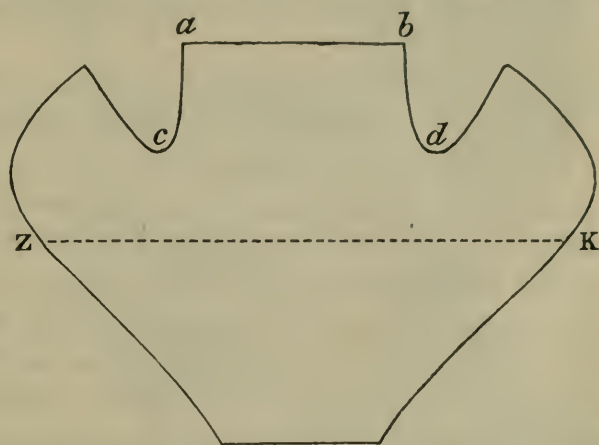
The object in having the central portion at the upper margin of the flap so broad is to enable the operator to make the formation of the septum part of the primary operation. The points at $a\,b$ and at $c\,d$ should be brought together by means of metallic sutures. The anterior portion of the septum is then formed by forcing back the rectangular portion of the flap, the sides of which are united, in the manner I have described, behind the remainder of the flap, and fixed in this position to the subjacent soft parts by means of sutures. The edges of the remainder of the flap were then carefully adjusted to the raw margin left after removing the remains of the partially-lost nose at the first stage of the operation. To do this I used upwards of twenty iron wire sutures. At the part of the flap corresponding to the dotted line ($z\,\kappa$) I cut deeply down to the bone, and at this situation I commenced removing the periosteal covering by means of one of the periosteal elevators used for elevating the membrane at the junction of the alveolar with the horizontal plates of the superior maxilla. No difficulty attended this stage of the operation, and the membrane when removed was turned over and placed underneath the flap forming the new nose; the raw surface on the forehead was then dressed with charpie.

Second day after the operation.—The patient had a good night, but complained of considerable pain in the frontal region. The new nose was warm.

Fourth day.—Adhesions were beginning to take place on the left side of the nose; the frontal pain considerably less; there was no perceptible difference between the temperature of the new nose and that of the rest of the face

Sixth day.—I took out on this day five of the iron sutures on the left side; the patient was cheerful, his appetite good, and he slept well.

Twenty-fourth day.—Adhesion on both sides was perfect.

Five weeks after the operation I divided the bridge at the root of the nose. This improved the appearance of the patient very much. The stalk, which I brought over to the mesial line, united to the parts beneath in its new situation by the first intention.

A glance at the accompanying chromo-lithograph, executed by Mr. Lewis, of this city, from a drawing by Connolly, will show the appearance of the patient exactly three months after the operation. The only unfortunate circumstance connected with this case has been the tendency to a slight falling-in of the right ala of the new nose. This, however, is not very apparent when you view the face directly in front, and hardly at all observed in the three-quarter face, as may be seen by referring to Mr. Connolly's drawing. I have no doubt, however, that I shall easily rectify this slight defect by a future operation.

SUB-PERIOSTEAL RESECTION OF THE ELBOW-JOINT.

The resection of articulating extremities of bones is becoming every day more popular among practical surgeons. Resection, however, as far as my experience goes, appears to be attended with more satisfactory results when performed at the elbow-joint than at any other articulation, and it is to this operation that I would direct the attention of my readers in the following remarks.

I do not think that, hitherto, sufficient attention has been directed by surgeons to the best means of obtaining good flexion and extension of the limb after excision of the elbow-joint. In truth, without obtaining this, to a greater or less degree, the operation cannot be looked upon as a success. To obtain the greatest amount of useful motion in the limb after resection should be the ambition of every surgeon, and to effect this I wish to

CONTRIBUTIONS TO PRACTICAL SURGERY BY WILLIAM STOKES.
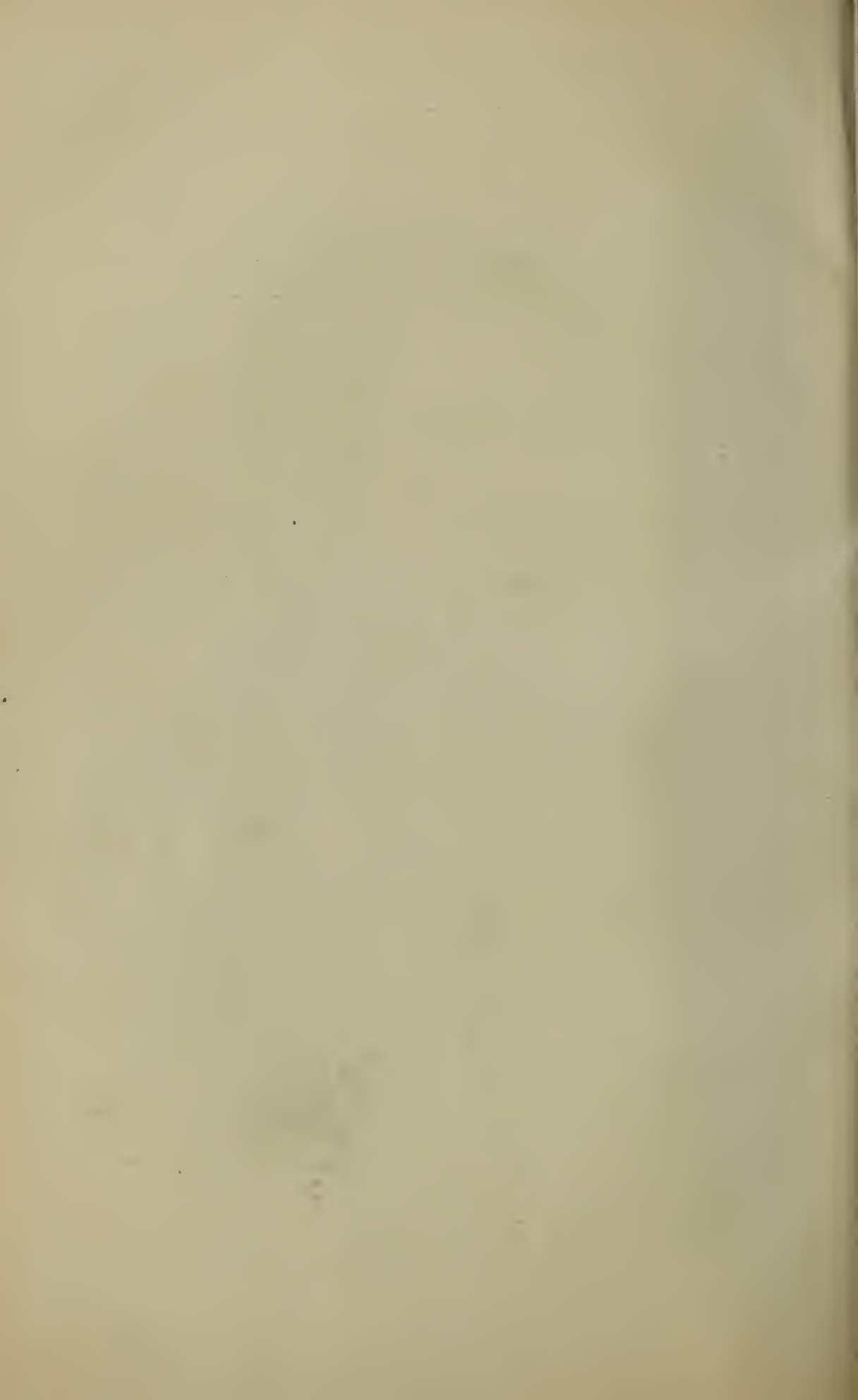
advocate, in the performance of this operation, careful attention to four important particulars:—

First.—The adoption of the long vertical incision of Park.

Second.—The preservation of the periosteum.

Third.—Treatment of the wound by the continual bath.

Fourth.—Gradual flexion and extension of the forearm during the convalescence of the patient.

The particulars of the following case will illustrate the practical utility of these suggestions:—

C. W., a girl of delicate, strumous habit, was admitted into the Meath Hospital on the 20th of last September. The patient stated that, four months previous to her admission into hospital, she received a fall, in which the elbow was struck on the ground with great violence. After falling, the patient suffered severe pain in the joint; it swelled greatly, and she found it impossible to extend or "stretch" it, to use the patient's own expression. This inability of extension of the arm remained a permanent condition. The patient had sought for no surgical advice until three months had elapsed after receiving the injury, at the end of which time she was taken by her relatives to one of the hospitals of this city, where she was informed she had received a dislocation at the elbow, and that, three months having elapsed, any attempt at reduction would be useless. A month after this she was admitted, under my care, into the Meath Hospital. I found the arm forcibly flexed; extension was impossible. The soft parts about the joint were swollen and puffy, so that I was unable to determine what had been the nature of the original injury—whether it had been a luxation or a separation of the epiphysis, which the age of the patient rendered so probable. In addition to this condition, there were three sinuses situated over and in the immediate neighbourhood of the internal condyle of the humerus; and on introducing a probe into any one of these the existence of soft diseased bone could be readily determined. Through these there was a continual discharge of thin purulent secretion. We had therefore in this case two indications for operative interference. In the first place, the almost completely flexed position of the limb rendered it a perfectly useless member, and, in the second, there was undoubted evidence of incipient caries of the osseous structures of the joint. These I considered sufficient to warrant me in strongly recommending resection of the joint, an opinion in which my colleagues concurred.

On the 30th of September I proceeded to resect the joint in the following manner:—A long straight incision, beginning about an inch and a-half above the olecranon, and carried to about the same distance below it, was made along the *ulnar side* of the olecranon. I then turned the edge of the knife from me, and directed the point of the instrument deeply to the bottom of the olecranon fossa, dividing all the soft parts down to the bone, following the line of the original incision. When the soft parts were dissected off as far as the edges of the bone, I commenced raising the periosteal envelope by the two elevators which are here delineated. The elevation was
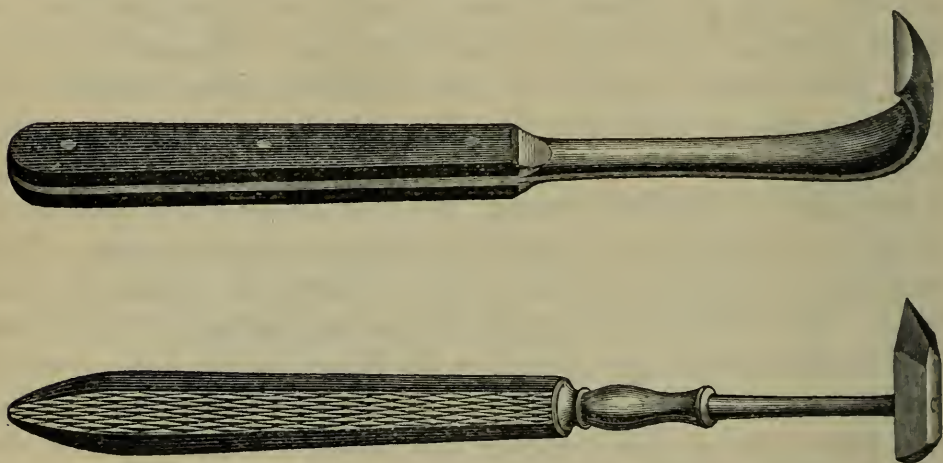
comparatively easy where it was situated over the diseased portion of the bone, for in this situation it was thickened and loose; over the sound bone it was a matter of much greater difficulty. Having succeeded in getting off two broad strips of the membrane, one over each side of the line of the original incision, I completed the operation in the usual manner, using for the removal of the extremities of the bones Mr. Butcher's saw. The edges of the wound were then brought together and fixed by iron wire sutures, a piece of oiled lint being first introduced into the wound to serve as a vent for the purulent discharge.

The operation being completed, the entire limb was invested in a gypsum bandage in the following manner:—The limb being placed in a semiflexed position, I commenced by enveloping it with a flannel roller, from the wrist to the shoulder, taking care to place a good padding of French wadding over the situation of the wound; it was next covered with a coarse muslin bandage, into which I had rubbed previously a considerable quantity of gypsum powder. This bandage, before being applied over the flannel one, was moistened with tepid water. The muslin bandage was then covered with a

layer of semi-fluid gypsum, and this, when nearly dry, was covered with another muslin roller, and after a second application of gypsum over this the bandage was completed.

September 30, 3, p.m., four hours after the operation.—The patient complains of great pain in the wound; this, however, was relieved by cutting an oval opening over it in the gypsum bandage. The long diameter of this aperture was fully half or three-quarters of an inch longer than the wound, from which there was no oozing of blood. The limb was then placed on a soft pillow, and evaporating lotions applied to it; ten drops of the solution of muriate of morphia and an ounce of wine was directed to be given. 9, p.m., ten hours after the operation—the patient much quieter; expresses herself greatly relieved by the aperture having been made in the bandage; ordered another draught containing morphia.

October 1st, 9·30, a.m.—The patient had no sleep; suffering great pain in the wound; pulse 120.

The bandage being now quite hard and dry, I painted all over it a solution of Dammar resin and ether. This soaked through the gypsum instantaneously. The limb was then placed, supported by a net, in the continual bath, which was productive of immediate relief from pain, and in *fifteen minutes* afterwards the patient was fast asleep, and slept for two hours and a half. She awoke greatly refreshed, and still free from pain.

October 2nd, 10, a.m.—The patient has had but little sleep, again suffering from pain in the wound, which was relieved by placing the arm in a *cold* water bath. She was ordered a cup of beef-tea and four ounces of wine.

October 3rd.—She had a good night, and slept soundly up to 7, a.m.; appetite improving; she was in every respect better, and free from febrile symptoms.

October 5th.—Removed the ligatures. The patient complains to-day of slight pain in the hand, which is considerably swollen, most probably owing to its being too dependent in the bath. The arm was raised so that nothing but the wound was in contact with the water. Appetite improving. Ordered four ounces of wine, beef-tea, and calvesfoot jelly.

October 12th.—Since last report everything has been going on favourably.

October 24th, four weeks after the operation.—The patient complains of considerable pain in the neighbourhood of the wound, and also at the back of the arm, where it had rested on the

edge of the bath. On examination I found that two small sloughs had formed in this situation. I then took the arm out of the bath, removed the gypsum bandage, and dressed this part with warm stimulating applications. The formation of these sloughs somewhat retarded the progress of the case, but when they separated and came away the healing process went on slowly but steadily.

On November 7th I commenced the gradual flexion and extension by means of a splint placed on the anterior surface of the arm, consisting of two portions, nearly equal in length, connected together by means of a hinge. Across these two portions a screw was fixed analogous to the one in M'Intyre's splint, by screwing and unscrewing which, when the splint was fixed to the arm, flexion and extension of the limb was effected.

It would be useless to enter further into the daily account of the progress of this case. The limb was exercised every day up to the middle of January, when I removed the apparatus. The annexed wood-cut, taken from the faithful pencil of Mr. Connolly, shows the amount of flexion and extension that the arm was capable of *three months and a-half* after the operation was performed. These motions were unattended by pain; and, in a short time, the girl was able to assist the nurse in the ordinary duties of the ward.
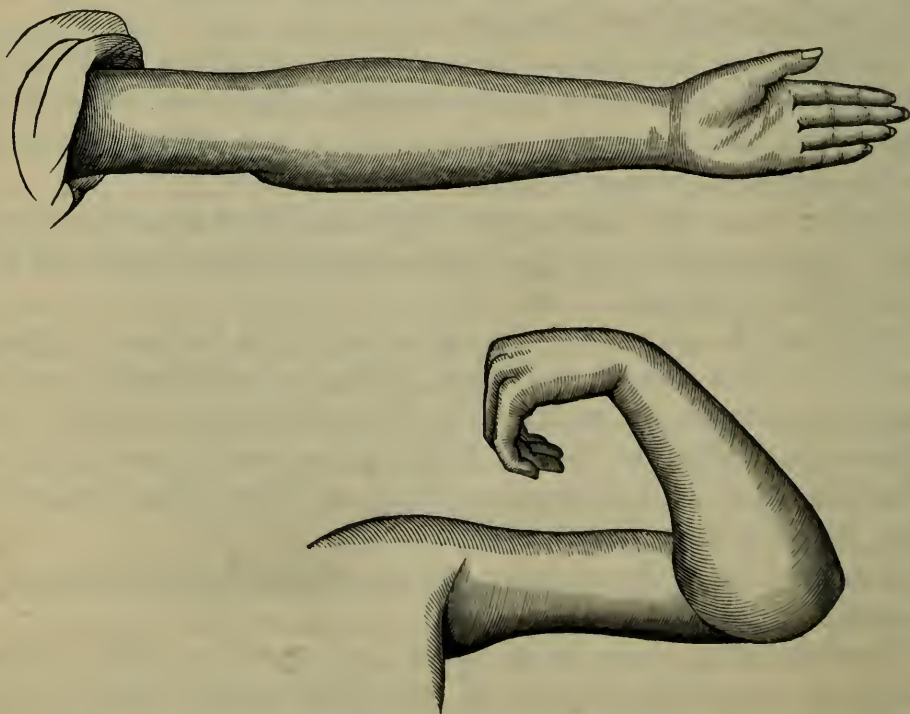
With regard to the four conditions which we have already

alluded to, and which, in my opinion, contributed so largely to the attainment of useful flexion and extension of the arm after excision of the elbow, namely, the adoption of the long vertical incision of Park, preservation of the periosteum, treatment of the wound by the continual bath, and gradual flexion and extension of the fore-arm after the complete healing of the wound, I would add a few remarks. First, with regard to the vertical incision. The advantages which appear to me to accrue from this procedure are threefold. In the first place the suppurating surfaces are necessarily less in extent when the vertical than when the ordinary H incision is made, and consequently the chances of rapidity of healing will be increased if the opportunities for suppuration be diminished. Another obvious advantage arising from the vertical incision is that the numerous muscles in the neighbourhood of the elbow-joint are not divided transversely, consequently there can be no transverse cicatrix in these tissues, the existence of which would certainly impede their subsequent action; and thirdly, the formation of a broad external cicatrix is avoided, which, when it exists, must necessarily, as Professor Syme has observed, impede in no slight degree the flexion and extension motions of the joint. Secondly, the periosteum should be preserved, not only because it has been proved by experience that the processes of ossification and healing are promoted by so doing, but also because the shape of the joint becomes much more natural in its appearance than in the cases where this membrane is removed. Thirdly, the use of the continual bath is of the greatest importance, in order to keep the wound in a constant state of absolute cleanliness, than which nothing promotes in a greater degree rapidity of healing. Fourthly, gradual flexion and extension of the fore-arm, after the wound is healed. The advantages of this are so apparent that any discussion as to its utility and importance is obviously unnecessary. I shall now proceed to give a brief description of the continual bath, to which I have already so frequently alluded.

THE CONTINUAL BATH.

Before proceeding to the consideration of the third case, to which I shall direct the attention of my readers, I wish to describe briefly a bath which I have devised, and largely used, not merely in the after-treatment of several operations, but also in many forms of injury and surgical disease. It occurred to me that if

some method could be devised by means of which the temperature could be maintained in the bath without disturbing the patient by repeatedly changing the water, which it was necessary to do when its temperature fell below a certain point, that a great deal would be gained; for, undoubtedly nothing is more conducive to the healing of wounds and injuries than perfect rest and cleanliness. In the after-treatment of resections, especially of the elbow-joint, it is of the greatest importance that these two conditions should be fulfilled. The former can but be obtained by encasing the limb in a fixed apparatus, such as the gypsum bandage already described, and the latter by keeping the wound for a considerable time—two or three weeks at least—continually immersed in water. Great care should be taken to avoid, as much as possible, disturbing the limb while in the bath by frequently changing the water in consequence of its losing its temperature. The method I had recourse to for preventing this was to bring *steam*, which was generated in a still, into the bath. This was accomplished easily, and nothing could work more admirably than it did. It was then suggested to me, that as there was no regulator as to the amount of steam generated and conducted into the bath, a case might occur when, in consequence of negligence on the part of the nurse or person in charge of the patient, the temperature of the water might rise to such a height that unpleasant consequences would result. To prevent this contingency occurring, I adapted a very ingeniously constructed thermometer to the bath, which, by regulating the amount of gas supplying the burner under the still, indirectly regulates the amount of steam generated in the still, and consequently the temperature of the bath. I am not aware who was the deviser of this very ingenious instrument (a woodcut of which I affix here) but its application to the bath was suggested to me by Professor Haughton. The

letter A is opposite the tube connected with the gas burner, and conducts the gas to the glass, B, of the thermometer.

The metal tube, C, conducts gas to the elastic tube which goes to the burner underneath the still.

D, the mercury.

E, small orifice facing the arrow to admit of a sufficient amount of gas to keep the burner of the still from being extinguished when, owing to a too high temperature of the bath, the mercury rises to the orifice F of the metal tube C.

The metal tube (C) which is inside the glass one (B) is so arranged that it can be moved up or down—in other words the distance between its orifice (F) and the mercury can be increased or diminished at will. When you desire the temperature of the bath not to go beyond any given degree, you observe first to what height in the glass tube (B) the mercury at that temperature will rise to. Having determined the point at which the mercury ceases to rise, you bring the metal tube (C) nearly, *but not actually*, in contact with the mercury. It follows, then, that if the heat of the bath rises beyond the degree at which it was originally set, that the mercury will then rise and occlude the orifice (F) of the metal tube (C). The result of this will be that the gas burner under the still will fall, less steam will be generated and conducted into the bath, its temperature will therefore sink, and the moment this takes place the mercury in the glass tube (B) will also sink, and the orifice (F) will again become open, the gas flame under the still will again rise, more steam will be generated in the still, and so the temperature of the water in the bath will be prevented from rising or sinking below any given degree. The general principle of the bath will, no doubt, be best understood by reference to the annexed woodcut, which represents the bath as I made use of it in the case of Johnson, to which we shall presently advert.

CASE III.—*Caries of the Metatarsal Bones of Eighteen Months' duration; Excision of the Third and Fourth Metatarsal Bones, and After-treatment by the Continual Bath.*—John Johnson, aged twenty-six, by occupation a sawyer, came under my care in the Meath Hospital, on the 1st of last September. The patient stated that, eighteen months previously, he first commenced to suffer from the formation of abscesses, not only on the dorsum but also on the sole of the foot. He was quite unable to continue his work on account of the pain it gave him to put his foot to the ground, which

also rendered walking impossible; in fact he had not attempted to walk for the sixteen months previous to September, 1864. He had been
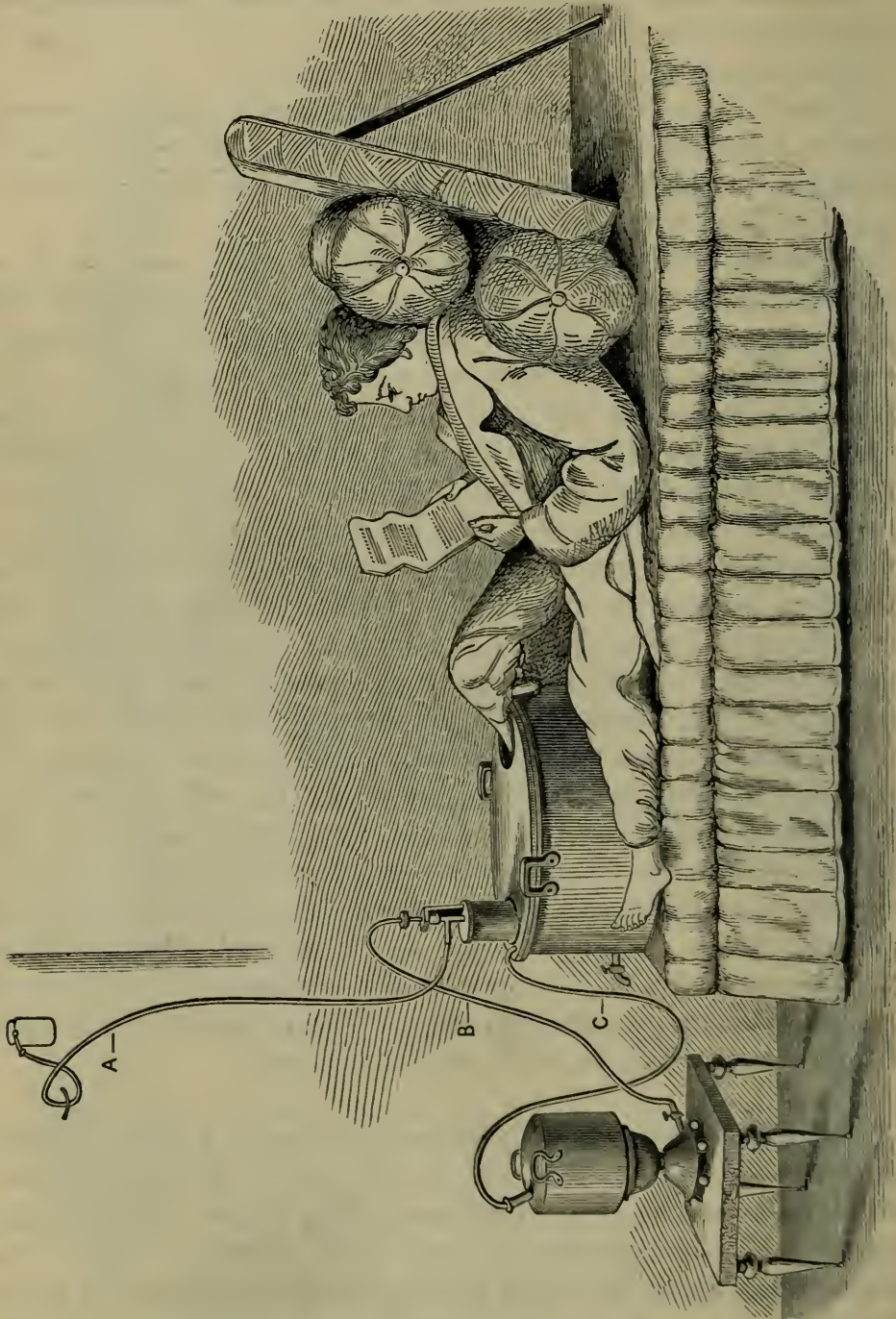
The Continual Bath.

A, the elastic tube conducting gas from gas-pipe to thermometer. B, a second elastic tube bringing gas from the thermometer to the burner below the still. C, tube conducting steam from the still to the bath.

under the care of various surgeons, who had done everything that tonic medicines, generous diet, rest, &c., could do to improve the patient's condition. The perforated elastic tubes of M. Chaissagnac had also been introduced, but all in vain; the *fons et origo mali*, which was caries of the metatarsal bones, still remained. I accordingly recommended my patient strongly to consent to some operative interference by which the diseased bone would be permanently removed, and he at once consented; and, Mr. Porter and my other colleagues taking the same view as to the propriety of performing the operation, on the 2nd of September the diseased bones were removed in the following manner:—I commenced by making an incision, fully three inches and a-half in length, over the situation of the third metatarsal bone. I then dissected off the soft parts on either side of this incision, and soon got a view of the whole disease, which was confined altogether to the third and fourth metatarsal bones. The disease had advanced so far, and the bones were consequently so soft that their removal was accomplished with the greatest facility. The wound was then closed, and the edges brought into apposition by six iron wire sutures; cold water dressings were then applied, and the patient was sent to bed.

Sept. 3rd, twenty-four hours after the operation.—The patient had suffered greatly from pain during the night, which deprived him altogether of sleep; he had also been greatly distressed from continual retching for several hours after the operation; pulse, 98. Ordered beef-tea and four ounces of wine. The continual bath was now got ready, and as soon as the foot was immersed in the water the patient expressed himself greatly relieved. The temperature of the water was 85°.

I shall not detail the daily account of the progress of this case. On the 25th of September, the wound being nearly healed, I took the foot out of the bath; on the first of October it was completely healed; and on the 2nd of October, exactly one month after the operation had been performed, the patient showed that he was able not only to walk and run, but he could actually hop across the ward on the foot that had for eighteen months been the seat of a most painful and distressing disease. It has never been my lot to witness a greater triumph for the cause of conservative surgery.

The continual bath has also been employed by my colleagues; and Dr. Smyly found great advantages arising from it in cases of

burns in the vicinity of joints, in general burns, and in caries.   In a case in which such extreme sensibility existed that the use of chloroform was thought of before removing a long-adherent bandage, the bath produced immediate relief, and greatly assisted in the granulation and cicatrization of the eschar.

My colleague, Mr. Collis, also speaks highly of its use in cases of a similar nature.

ART. XI.—*Observations on the Treatment of Colles' Fracture with "Gordon's Splint."* By GEORGE H. PORTER, M.B., T.C.D.; F.R.C.S.I.; Senior Surgeon to the Meath Hospital and County of Dublin Infirmary; Examiner in Surgery Royal College of Surgeons, Ireland; Consulting Surgeon to the Coombe Lying-in Hospital; Member of Council of the Surgical Society of Ireland; Member of the Pathological Society of Dublin; Lecturer on Clinical Surgery.

SINCE the year 1814, when the late Professor Abraham Colles described the fracture of the lower end of the radius in the *Edinburgh Medical and Surgical Journal*, the subject has attracted the attention of many eminent surgeons.   This can be easily accounted for when we recollect how frequently the fracture is treated in hospital and private practice, and what a length of time is required to allow the patient even a moderate use of the injured limb.   This tardiness towards perfect recovery occasionally prompts the sufferer to cast blame on the surgeon, as censurable for unskilful diagnosis, or subsequent malpraxis, especially if he has omitted to prepare his patient for such a sequela, by telling him that stiffness, pain, and inability to use the forearm will continue long after every apparatus has been removed.   There are few surgeons who have not seen poor patients, entirely dependent on the use of their hands for support, kept out of employment for months after the accident, and unable to understand why their sufferings should have been so much prolonged.   Often also surgeons are consulted by those in the higher walks of life for a remedy for stiff, and perhaps deformed limbs, which the patients believe were, at first, improperly treated. I feel it unnecessary, however, to apologize for laying before my professional brethren the results of my experience of a mode of

PLATE I.

Mᴿ PORTER ON TREATMENT OF FRACTURE OF THE RADIUS

Forster & Cº Dublin

treatment of Colles' fracture, which, in my own practice, was successful, and which I have seen attended with like results in that of others. It would be superfluous to enter here into the consideration of the pathology of this fracture, as it is in the present day well understood, owing to the investigations of distinguished surgeons, amongst whom I would especially mention Professor Robert Smith of this city, who has dealt with the subject in a most exhaustive manner. I may, however, remark that Professor Gordon, of Belfast, is of opinion that the fractured extremities of both fragments are displaced forwards, and inwards. I had the opportunity of dissecting a man who, having been carried up by the belt of a large steam engine, and then thrown down to the floor from a height of fourteen feet, received a fracture of the skull, and Colles' fracture in the right forearm. The external features of the injury were prominently marked, and I found, on dissection, the displacement he describes. Up to the year 1862 I was in the habit of treating cases of fracture at the lower end of the radius, with the pistol-shaped splint on the dorsal aspect of the forearm and hand, after the plan of Nélaton, or perhaps, more properly speaking, that of Blandin. And, although many cases turned out well, I have often noticed that the dorsal splint was apt to shift from its place at the upper part of the forearm, and cause such an amount of pressure on the swollen back of the hand, that it could not be endured; while the constrained position of forced adduction, coupled with the confinement of the thumb, added to the patient's very great discomfort. My valued colleague, Mr. Wharton, however, was kind enough to lend me the splint recommended by Gordon, and also his *brochure* on this particular kind of fracture; and, as a well marked case of the accident was presented at the Meath Hospital, I put up the fracture according to Professor Gordon's plan, and with so much satisfaction to myself and patient, that I now, if possible, use it in every such case submitted to my care. The fracture was firmly united in four weeks, and the woman had perfect use of her wrist in four months from the date of the accident. Before I describe the splint, I may remark that the great object had in view by the inventor was to devise means for ensuring the restoration of the natural concavity of the radius, which he considered had not, previous to the introduction of his splint, been accomplished by any known apparatus. The splint is very peculiar in appearance, and from the fancied resemblance it bears to a little boat, or rather to the keel of a boat, it is called by some the "boat-shaped splint." It should be made of

light wood, such as deal or pine, about eight and a-half inches in
length, three and a-half inches wide at the upper end, and two and
a quarter inches at the wrist.   Along the radial border a piece of
wood is screwed, *vide* Plate II., Fig. 1 *a*, in such a manner as to
form a firm resisting pad along the radius, and so bevelled at the
wrist as to fill up, and fit the natural concavity of this bone.   It
should further be hollowed out on its anterior surface so as to
allow the forearm to rest in it.   Dr. Gordon gives the following
directions with respect to its construction:—" On the radial side it
should project beyond the radius, and the bevelled piece for filling
up the concavity of the radius should be attached half an inch at
least internal to that border.   The breadth of its lower, or carpal
end, should not exceed that of the forearm at the wrist, it should
not project so much internally as to be on a level with the inner
border of the forearm."   Such is the description of the splint now
used by this surgeon.   Prior to its adoption he was in the habit of
employing one with a piece of wood attached for the hand to be
bandaged to (Plate II., Fig. 2), but he now disapproves of it, as
he considers the portion for the hand prevents its proper flexion,
and counteracts the action of the posterior splint.   I will show
the advantages of the oblique position of the radial wooden pad
when describing the mode of putting up the injury.   Mr. Gordon,
contrary to all other authorities, recommends the prone position as
the best for the forearm to be maintained in; and certainly I have
found it the easiest to the patient.   The state of forced adduction
of the hand he considers useless; although the first splint employed
by him (Plate II., Fig. 2), kept it somewhat in that condition, and
I have observed that it was most irksome to be borne.   In addition
to the peculiar splint described above, Mr. Gordon uses, in treating
Colles' fracture, a second splint extending from the upper end and
back part of the forearm to the metacarpus.   He does not give the
measurements of this; but what I have found to answer is one
made of deal, about eleven inches long, and two and a-quarter
inches in width, slightly hollowed out to fit the forearm.   The
apparatus then of " Gordon," if I may so term it, consists of two
splints, two thin cushions or pads, and two straps with buckles;
these last named being about thirteen inches long, and one and
half inch wide.   With regard to the pads, he recommends that the
anterior splint should be padded with spongio-piline or tow, and
the posterior similar to that used by Nélaton.   I have always
employed those made of fine calico, stuffed with wool or cotton,

PLATE II.

Fig. 1.

Fig. 2.
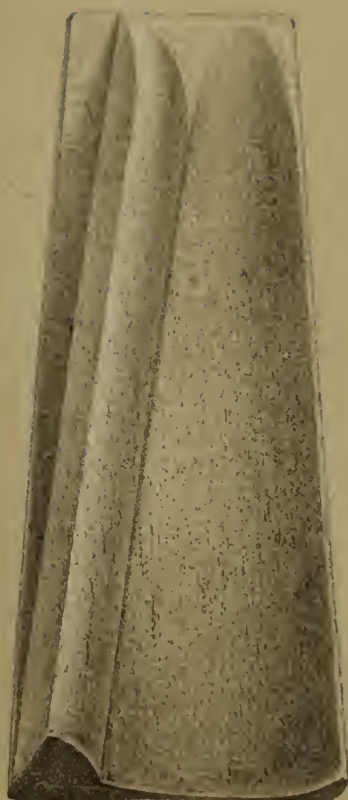
neatly quilted, and found them to be comfortable and efficient. The posterior one should be, of course, thick over the carpal fragment of the radius and carpus, as shown in Plate I., or a pad of the same thickness throughout may be doubled on itself over the carpus, and will suit equally well.

MODE OF PUTTING UP THE FRACTURE.

The surgeon, in order to reduce it, should make extension; grasping from the front the radial border of the fractured forearm in one hand, and the hand in the other, at the same time pressing back with both thumbs the forward projections of the fracture. This having been accomplished, the forearm should be laid on the splint, in the prone position, the hand hanging over, and the bevelled portion of the radial pad brought exactly under the seat of fracture. The dorsal pad should now be applied, with its splint, and the whole bound together by two straps, as delineated in Plate I., and the injured limb placed in a sling of suitable length, with the hand hanging over unsupported. The mode of binding the splints and pads together with straps and buckles, I cannot too highly praise. They are far more comfortable to the patient than calico bandages, being cooler, and capable of being loosened with so much ease. To the surgeon they afford a simple and easily adapted form of deligation; permiting him to see how matters are going on, and to apply soothing, or cooling applications. The apparatus, we may suppose, having been adjusted, its mode of action, and advantages, may be shortly considered. It is evident that the projection of the splint, about half an inch internally, protects the radius from pressure of the lower strap; and its not projecting on the ulnar border allows pressure to be thrown on it. To use the words of Dr. Gordon:—" By this arrangement the ulnar side of the forearm sustains the pressure of the bandage or straps; the reverse is the case on the radial side. The radial border of the splint alone is pressed upon; this pressure forces the bevelled portion inwards upon the concavity of the radius, and pushes it backwards, whilst, at the same time, the outer border of the radius is protected from pressure. If the ulnar margin of the splint projected beyond the ulnar border of the forearm, it would be pushed outwards when we applied the bandage, and the bevelled portion would be removed from the concavity of the radius and left unsupported."

The following outlines of seven cases treated by Gordon's splint, will, I think, be considered adequate evidence of its usefulness to

the surgical practitioner, and of its claim to general adoption, the use of it hitherto not having been very frequent, because, I am sure, it has not been more generally known. I have not thought it necessary to give a large list of cases; for if the treatment be good, it requires no long enumeration of successful results to lead to its adoption; if, on the other hand, it be injudicious or inefficient, a volume filled with cases would not ensure its recognition.

CASE I.—Anne M., aged forty-five years, an extern patient at the Meath Hospital; she received Colles' fracture of right forearm by falling over a pail of water. Gordon's splints were applied, and there was perfect use of the forearm in four months.

CASE II.—Mr. O'C., aged seventy, subject to attacks of vertigo, fell down a short flight of stairs and sustained Colles' fracture in right forearm; Gordon's splints were adapted, followed by a good use of the forearm in sixteen weeks from the time of the accident.

CASE III.—Mrs. K., aged fifty-five, received Colles' fracture of right forearm by slipping on an oilcloth in her dining-room, and throwing forward her right hand to save herself. Gordon's splints were applied in ten hours after the accident, and perfect recovery ensued in five months from date of injury.

CASE IV.—Jane S., aged forty-six, a servant, fell in the street whilst endeavouring to escape from a horse and car; Colles' fracture of left forearm was produced. Treated with Gordon's splints, and recovery was complete in four months.

CASE V.—William O., aged thirty, a groom, sustained Colles' fracture of right forearm by a fall from a horse. Gordon's splints were used, and perfect recovery in five months was the result.

CASE VI.—Anne F., aged sixty, an extern patient at Meath Hospital; she fell whilst walking across a room, and received Colles' fracture of right forearm. Gordon's splints were applied, and good use of limb in three months was the consequence.

CASE VII.—Mr. D., aged sixty, fell from a stool which turned under him whilst lighting a gasalier, and received Colles' fracture of left forearm in trying to save himself. Gordon's splints were used, and his recovery was effected in five months and a-half.

The results of the preceding cases warrant me, I conceive, in recommending this splint to the profession, as one highly suitable in the treatment of an injury we are called on so frequently to deal with; and one, at the same time, which, although managed with the greatest care, is likely to prove tedious in recovery, and to draw forth complaints from the patient if the wrist be not left quite as shapely as before the accident. The advantages I claim for this mode of dealing with Colles' fracture may be summarized thus:—

1st.— It is more comfortable to the patient than any other.

2nd.—It restores the natural concavity of the radius, and produces a straighter limb.

3rd.—Perfect use of the forearm is obtained sooner by it than by any other method.

4th.—The manner of binding with two straps is lighter and more manageable than the application of rollers.

The splints, it may be added, with the necessary pads and straps, can be procured at Mr. Fannin's, Grafton-street, Dublin.

Art. XII.—*Cases of Pleurisy with Fetid Effusion, simulating Gangrene.* By William Moore, M.D., Dub., M.R.I.A., Fellow of the King and Queen's College of Physicians; Physician to Mercer's Hospital, to Sir P. Dun's Hospital, and to the Institution for Disease of Children; Pitt-street ; Lecturer on Practice of Medicine, &c., &c.

As cases of pleurisy with fetid effusion are not of very frequent occurrence, the following details may not be wholly devoid of interest. The first instance I shall adduce was that of James S., aged twenty-five, unmarried, a plumber by trade, who was admitted into Mercer's Hospital on the 17th of January last, complaining of a troublesome cough, with fetid expectoration, and attended with frequent vomiting and great prostration. He states that his father died at the advanced age of eighty-six, that his mother is still alive, also a sister and brother, all in the enjoyment of perfect health. Four years ago he contracted syphilis, for which he was treated very freely with mercury, and about a year ago he suffered from rheumatic fever. During the prevalence of snow this Winter, whilst working out of doors at his usual occupation, he got wet feet;

this was succeeded by rigors, his habits at this time being very intemperate, having fallen asleep in wet clothes. The rigors recurred, accompanied with sharp pain in the left side, and violent retching, which continued for the ten days previous to his admission into hospital, under the care of my colleague, Dr. Mason. On the 1st of February I came on duty, when I found the patient pallid and anxious, with a troublesome cough; the expectoration very profuse, of a greenish frothy character, and so fetid as to impregnate the whole ward, the fetor being of the wet mortar semi-fecal odour. His pulse was very weak—120; he had profuse night sweats, and was unable to lie on the affected side, whilst the retching was very distressing. On examination I found visible enlargement of the left side, posteriorly and laterally, with dulness, on percussion, from the scapular ridge down to the base of the lung, and absence of vocal fremitus. Over the superior and posterior portion of the left lung respiration was audible, but feeble, and attended with a crepitus, whilst inferiorly respiration could not be heard, and vocal sounds were absent. There was displacement of the heart to the right side. Percussion and respiration over the front of the left lung were clear, and the physical signs over the right side generally were normal.

The dietetic and therapeutical treatment now exhibited consisted of two ounces of brandy beat up with two eggs, a quart of porter, and beef-tea *ad libitum*, whilst at the same time he got fifteen grains of chlorate of potash in infusion of bark, three times a day, with a grain of opium at bed-time. A blister was applied over the base of the left side.

On the 7th of February the expectoration had diminished to about a pint and a-half in the twenty-four hours, and this now partook more of the " musty hay " than of the fecal character; the retching was not so distressing, and the night sweats were not so profuse; pulse 115; dulness over the left side unchanged, but respiration could be heard lower down. The side was painted with tincture of iodine.

On the 9th his pulse was 96, and in other respects there was a general improvement, the expectoration having diminished to about a pint in the twenty-four hours, still greenish and frothy, but having lost its fetor, with the exception of an occasional sputum which still retained a taint. The respiration could now be heard over the entire left side.

On the 14th February the patient's general condition had im-

proved, respiration could be heard over the posterior half of the left lung, attended with a fine crepitus; the dulness, on percussion, was unchanged, the expectoration was less, and the fetor had entirely disappeared.

On the 16th February a fresh pleuritic attack ensued, evidenced by severe lancinating pain and dyspnea. The respiration was again lost over the base of the left side; the patient continuing for about a week in this unsatisfactory condition, during which time all the physical signs of empyema were present, but the expectoration remained free from fetor. The last week in February brought about a favourable change. Respiration was restored all over the left side; the patient's strength was increased; he sat up daily for hours, and promised fair to be in a position to leave the hospital in a few days.

Now the diagnosis of gangrene of the lung is usually arrived at by fetor of the sputa, coupled with signs of pulmonary disintegration; but cases from time to time occur which tell us that fetor and purulent expectoration do not suffice to warrant the conclusion that gangrene exists, as cases of bronchitis with dilated bronchi yield sputa of the " wet mortar" fetid odour, and of similar appearance. Dr. Laycock[a] has published such cases, in one of which butyric acid and butyrates were the cause of the odour, and the connexion of this sputa he traced to cerebral phenomena. In his second case the fetid bronchitis existed, with aortic insufficiency and dilatation, pulmonary condensation and softening, with atrophy, and softening of the left lobe of the cerebellum. In his third case the fetor and bronchorrhea occurred in tertian paroxysms, with convulsive cough.

Professor Cameron was kind enough to examine the expectoration of this case for me, which showed an alkaline reaction; 100 parts yielded, on evaporation, only 1·97 of residuum. It contained peroxide of iron, mucus, and pus, with a little blood. The microscope revealed a few muscular fibrillæ, and a number of irregularly-shaped particles, which he considered tubercular fragments. The fecal odour, he thinks, must have been due to decomposed blood.

But S.'s case bears no close analogy to any of Dr. Laycock's cases. The symptoms and physical signs were those of pleuritis, with effusion into the left pleural cavity, occurring in a patient whose constitution had been vitiated by intemperance and abuses of

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[a] Medical Times and Gazette, 1857.

various kinds. Now, the removal of the profuse fetid expectoration, without any of the symptoms or physical signs of a fistulous communication having been established between the bronchial tubes and pleural cavity is a point of some interest in this case. Can a perforation occur in such cases without allowing the entry of air into the pleural sac, or does exosmosis through the membrane take place? The latter view seems the more probable, the fluid (the fetor of which was due to its character in the pleural sac,) having made its way by transudation into the bronchial tubes, and was thus vicariously removed. For discharges with fecal odour we have analogies in the cases of abdominal abscesses, without any evidence of direct communication with the intestine.

The dulness on percussion, absence of respiration, with distention of the side, and cardiac displacement, leave us no doubt as to the presence of empyema; but might it have been associated with pneumonia; if so it would be analogous to a case recorded by Dr. Walsh,[a] in which a man affected with pleuro-pneumonia of the right inferior lobe recovered; but during the progress of his convalescence hemoptysis, followed by copious frothy expectoration, with fetor so intense as to affect the atmosphere of a large part of the ward. Were these conditions to be regarded as the result of gangrenous excavation in the lung substance, impaired in its nutrition by the pleuro-pneumonia, or as the effects of fetid bronchitis accidentally co-existing with the special physical state, no cavity actually existing. The issue of the case proved the latter view to be correct, as the man left the hospital in fair general health.

In S.'s case the presence of the crepitus with fetor did not go to prove that gangrene existed; but that tubercular disease does exist, I feel satisfied, hence the return of the pleuritis, and the comparatively tardy character of his convalescence. I may here refer to a case of empyema, with profuse fetid expectoration, which occurred in a girl about eight years of age, and which I published at the time in the *Dublin Hospital Gazette*, in the year 1859. In this case there was bulging of the side, with displacement of the heart. During the course of recovery muco-crepitating râles pervaded the lower part of the lung, *pari passu* with the absorption of the fluid, which completely lost its fetid character, and the recovery was complete. Here there was no evidence of any fistulous

[a] Diseases of the Lungs. 1860.

communication between the bronchi and pleural sac. A third case I shall adduce was that of a delicate girl, aged fourteen, who had menstruated at the early age of eleven, the catamenia recurring profusely and too frequently. She was suddenly seized with severe pain in the base of the right side, attended with fever, and all the physical signs of pleurisy with effusion. Expectoration was early established, of a greenish frothy kind, amounting to over two quarts in the twenty-four hours, and so fetid as to be intolerable to some members of her family, the fetor being more fecal than that usually associated with gangrene.

In eight days this case ran a most favourable course under the free use of claret and stimulating expectorants, the fetor gradually disappearing *pari passu* with the decrease of the expectoration, till the recovery was complete. In this case there was dulness for a considerable period, with subsequent retraction of the side, but the lady is now as hale and healthy as the average of her sex. Here we had all the symptoms of fetid empyema, viz., imperfect friction sounds, with subsequent dulness, and distant tubular respiration, occurring in a girl enfeebled by early and profuse menstruation (in addition of a strumous family), terminating favourably without any evidence of direct communication between the bronchi and pleural sac.

The late Dr. Greene,[a] in his valuable paper on empyema, found copious purulent expectoration a frequent accompaniment, depending, in some instances, on a fistulous communication between the seat of the collection and a bronchial tube, whilst in other cases the expectoration was equally copious and purulent, while all the physical signs of such a communication were absent. Such conditions existed in the above cases, the low vital resistance of the membrane permitting at once of the transudation of the fluid, and of the fetid intolerable gas.

Art. XIII.—*Notes on Practical Midwifery.* By Wm. J. Cummins, M.D., Licentiate of the King and Queen's College of Physicians, &c., &c.; Physician to the Cork Dispensary.

There are few subjects more interesting to the medical profession than the statistical results of the physiological act of parturition—a

[a] Dublin Medical Journal, Vol. xvii.

process which, since the earliest times, has often required, if it did not receive, the assistance of our art.

In these days of registered facts and observations, we are able to realize with much accuracy the amount of danger to mother and child which attends labour, within the many noble institutions for the relief of poor lying-in women; we can also estimate it to some extent among the poor of metropolitan towns, who are attended by the students of the various hospitals. But while the average mortality in intern and extern practice is found to differ much, it may be presumed also to differ from that of general obstetric practice, which neither represents; for, in the first place, notwithstanding the improvement that has taken place in the management and ventilation of midwifery hospitals, the very fact of bringing together a number of pregnant and puerperal females must influence both maternal and infantile mortality, while the circumstances in which the poor of towns are placed, the want, the squalor, the misery, the intemperance, the overcrowding, and all the other hideous aspects of intramural poverty, cannot fail to raise the death-rate of parturition.

It has occurred to me, therefore, to contribute my mite towards a more general record of practical midwifery, by giving a history of my practice in a suburban district during the last eleven years, conceiving that although very imperfect, and deficient entirely in a record of infantile mortality, except in operative and complex cases, it may be considered interesting, and may lead to a more careful annotation of cases by dispensary medical officers, who in their capacity of registrars of births, have now the power to collect statistics of the relative frequency of cases of difficult labour. Our knowledge of obstetrics would be very much increased if even a minimum of practitioners would avail themselves of the facilities thus afforded them, and contribute the result of their practice to the medical journals. The new Act, unfortunately, does not contemplate the registration of still-born infants, a defect which can only be supplied by a private note of such cases, and by the attention of the Legislature being directed towards the omission, if at any time the law is brought forward for amendment. I have already from time to time published at length[a] several of the cases which enter into my present report, and given statistics of the forceps

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[a] See various papers by the author, published in the Cork Medical Society's transactions, Dublin Quarterly Journal.

cases for the first three years now referred to; [a] it is only necessary to mention that the present history includes these, and that the proportionate frequency of the operation up to that time differs little from that I am now about to bring forward.

I take the register of births for the year 1864 as the basis of a calculation of the number of labours with which I have had to deal, omitting only those which took place in the small portion of the district situated in the city, and on the Douglas-road, as being remote parts which did not come under my immediate observation. I may safely refer to all other cases as my own, for, residing, as I did, until the last two years, in the centre of the district, and knowing, I may almost say personally, the entire population, I was in a position to become aware of any accidents occurring among the small part of the better classes not attended by myself, and was invariably sent for by the three midwives who attended the poor, and who, besides being instructed by me, always sent for me whenever nature seemed unequal to the completion of delivery.

After making these necessary deductions, I find that there were ninety-five births during the year 1864, which, multiplied by eleven, amounts to 1,045. In such a district as Blackrock any single year's total of births may be considered a fair average, as the population is a remarkably fixed one. I calculate, therefore, that about 1,000 births occurred under my own immediate observation. twenty-nine of these were delivered with forceps, or one in about thirty-four-and-a-half. Twenty-eight of these infants were born alive, and lived subsequently, without any mark or abrasion which could indicate, after the first few days, that they came into the world under difficulties.

The one still-born child, which was of immense size,[b] was living when the head was delivered with the long forceps applied at the brim of the pelvis, but perished before the body could be extracted. I had the benefit of Professor O'Connor's assistance in the case, which was a very trying one. This and one other (also a primipara married rather late in life) were the only two cases where the perineum was ruptured as far as the edge of the sphincter ani. In both it was inflamed at the time of delivery; in both I deferred the use of instruments much longer than I should now consider

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[a] See paper On the Use of the Forceps by the author.—Dublin Quarterly Journal.

[b] This child was not weighed, but I subsequently delivered the same lady, with the long forceps, of a child which weighed 12½lbs.—*Ibid.*

myself justified in withholding them; but I may add, that both got well, or nearly so, without operative interference. In two other primipara operated on with the forceps (in one of which I had the benefit of Professor Harvey's assistance) the anterior part of the perineum was ruptured, but in neither case was the injury pro-ductive of any subsequent inconvenience. Taking all the forceps cases, twenty-nine, this accident did not occur as frequently as it does in unassisted primipara, for, according to Dr. Snow Beck's estimate, the relative frequency of perineal laceration is about one in five. (Quoted from a paper by Dr. Swayne, *British Medical Journal.*) Dr. N. J. Hobart assisted me in one of my forceps operations, the late Dr. Bernard in another, and the latter gentleman, when a student, also accompanied me to many cases among the poor. Among all these operations there was not a single maternal death; and with the two exceptions already alluded to, convalescence was as rapid, if not more so, than in ordinary labour. One patient required the forceps on three different occasions; the last time, which occurred very lately, the vulvæ were so much tumefied that great care was necessary both at the time of delivery and sub-sequently; to Mr. Oscar Honiball, who assisted me, and took the entire management of the case during convalescence, the patient was much indebted for her escape from laceration. Three cases required the operation twice.

A large majority of the forceps cases were primiparous, the necessity for the instrument arising from a combination of resistance on the part of the unyielding maternal structures, and inertia of the uterus. There were some cases of disproportion, but I un-fortunately omitted to note the particulars of all the cases, and so cannot state the exact number. I cannot mention, either, the length of time the patients were in labour, as I found it impossible to obtain reliable information on this point.

The perforator and crotchet had to be used three times; once for a hydrocephalic head, once where immediate delivery was necessitated by the symptoms, although the os uteri was not fully dilated, and once where, subsequent to the operation of version for arm presenta-tion, the head remained immovable above the brim of the pelvis, and could not be delivered, even after the death of the child, until reduced in size;[a] this case, and a subsequent one in the same

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[a] The particulars of this interesting case have been published.—Dublin Quarterly Journal.

woman, were the only transverse presentations that occurred; both infants were lost. Placenta previa was met with only once; it was partial and attended with considerable flooding, which endangered the mother's life and cost that of the infant, but was arrested by rupturing the membranes. The mother recovered.

Puerperal convulsions occurred thrice; once in a girl of eighteen, who jumped off a wall when near the full period of pregnancy, and was almost immediately after attacked. The fits recurred frequently, with complete insensibility during the intervals, for two days, when a dead fetus was born, and consciousness returned; the fits also ceased. She went on well for two days, when a large quantity of black blood was passed from the bowels, and she died. There was no *post mortem* examination, but the immediate cause of death was, probably, some internal injury caused by the fatal jump off the wall.

The second case of convulsions occurred about the seventh month, in a lady, who, for some weeks before, had albuminuria and general anasarca; she had suffered much grief and anxiety of mind during a sudden and dangerous illness of her mother, which was probably the immediate cause of attack. As her general habit of body was very robust I bled her freely about half an hour after the first convulsion. The fits were most severe, and, during a great part of the time they continued there was complete insensibility and stertorous breathing between them. I had the benefit of Dr. Popham's advice in consultation; leeches were applied to the loins, followed by sinapisms, and purgatives were freely administered. The first relief appeared to follow the free action of elaterium; but the fits did not entirely cease until labour, which came on almost imperceptibly, terminated in the birth of a still-born fetus. The patient continued insensible for nearly twenty-four hours after, when extreme excitability set in; this was treated with tartar emetic and small doses of opium, which caused free diaphoresis and great relief to the symptoms. Puerperal mania afterwards complicated the case, and health was not quite re-established for two or three months. This lady has since borne several children without a recurrence of albuminuria, toxemia, or mania.

The third case of convulsions was post partal, and occurred, without premonitory symptoms, on the third day after an easy confinement; the attack seemed to have been due to an injury of the head received during the last month of gestation, which, at the time, caused temporary and partial amaurosis. There was no

albuminuria, and urine was of the natural density. The case terminated fatally.

Two other cases of convulsions, one of them post partal, also occurred in the district, but not attended by me; both recovered. Besides the case of puerperal mania already alluded to there were two others, one due to anxiety of mind and fatigue of body in attending upon her husband in typhus fever. It came on three days after an easy labour; and the patient recovered in three weeks. The other occurred after a very quick labour, the immediate effect of which was great shock to the nervous system, which almost proved fatal, requiring the use of wine and laudanum for several hours. Convalescence was gradually being established, and the lady was able to sit up and take nourishment on the twelfth day, when an injudicious nurse related the particulars of some bad cases she had seen, and produced an effect which was soon after followed by mania, which continued about two months. Professor Harvey assisted me in the management of the case, and she perfectly recovered.

There was one case of paralysis of the face, and scarcely perceptible hemiplegia, which occurred during the eighth month of gestation. The urine did not contain albumen; and the symptoms yielded in a few days to purgatives, leeches, and counter-irritation behind the ear. Subsequent labour was easy and natural.

I met with one case of protrusion of the bladder before the fetal head; it was so complete that on first introducing my finger I thought it was the distended membranes. On separating the vulva it could be seen quite distinctly during a pain, and covered more than the anterior half of the pelvic outlet. Uterine action was strong; but during an interval of pain I pressed up the vesical tumour, and held it so, until the head descended into the position it had occupied, when labour almost immediately terminated naturally.

I was called to see one patient, a primipara, on the third day after delivery, suffering from extreme pain, fulness, and tenderness of the hypogastrium simulating that of metritis. On examination I discovered that the bladder was enormously distended with urine, which the flaccid condition of the abdominal parietes had permitted gradually to accumulate. The patient was not at all aware of the cause of her suffering. I drew off several pints of water; and, strange to say, the operation was not required a second time, as the patient suffered no further inconvenience.

I have had three cases in private practice which required the

daily use of a catheter for a short time after delivery; one of these overcame the difficulty, which recurred in the second and third confinements, by leaning forward during the act of micturition.

Several cases of breech presentation, and three of twin births, occurred under my observation; but there may have been others in the district, as I was only called to such cases as presented dangerous symptoms, or could not be terminated without assistance.

I had several times to remove the placenta from the uterus in consequence of adhesion or post-partal flooding; but no note was kept of these, nor of several abortions attended with profuse hemorrhage. They all recovered; but one of the latter, a poor woman, nearly lost her life. So great was the hemorrhage in this case that loss of blood caused a convulsion, and many of the hemorrhagic symptoms which usually precede death in such cases. I was not a little surprised at her recovery, which was due to the liberal administration of stimulants.

I must not omit to mention, while on the subject of abortions, that a lady was attacked with tetanus a few days after one, and died. The case occurred a short time after I took charge of the district, and was under the care of another medical man.

During the epidemic of puerperal fever, which was so fatal in Cork about five years ago, two of my dispensary patients presented symptoms of the disease, and, after alarming illnesses, recovered. In one of these the fever, probably, had some connexion, as to its cause, with a case of erysipelas in the next house.

About the same time a lady was also similarly attacked; but I had to decline to attend her in consultation with the gentleman who had charge of the case, and heard subsequently that an abscess formed in the pelvis and discharged through the rectum; she recovered.

In my own practice there were two cases of pelvic cellulitis, one of which was resolved by early antiphlogistic treatment, while the other suppurated, and opened into the bladder or urethra.[a]

Before I conclude this history I must make a few remarks upon four cases of pregnancy and labour in unmarried females, which were successfully concealed until I informed the bystanders that the infant was almost born. It seems strange that married relatives and friends, who know well, from painful and oft-recurring experience, the symptoms of pregnancy and labour, should be so easily

[a] Published as above.

taken in; but experience proves it to be far from uncommon; and the dissimulation practised in such cases is so great that the practitioner requires to be very wary lest he should be deceived himself. The extraordinary endurance of these poor victims of seduction under the mental and physical pain of their sad condition is most interesting to the philosopher and physiologist, and ought to teach a lesson to some few, who, surrounded with comforts and luxuries, and supported by sympathising friends, prolong their own suffering by irritability and want of resignation.

I have now stated all the accidents and difficulties which occurred in eleven years of practice in my present district, and it has been shown that only two mothers died, both of whom had received injuries, and one of whom sunk from intestinal hemorrhage. It may, then, be considered that, apart from casualties unconnected with pregnancy or labour, the mortality from parturition in the district has been absolutely *nil.* This satisfactory result is, I think, mainly due to the frequency with which instruments have been used; while to their timely use may be attributed the large proportion of infants who did well after artificial delivery.

In the year 1859 I read a paper before the Cork Medical Society, in which, with the greatest diffidence, I recommended the early and more frequent use of the forceps. At that time the general feeling among obstetric authorities was against instrumental interference, except when symptoms were present which experience had led me to believe should never be permitted to commence. Since then a great change has taken place in the views of practical men: the forceps is no longer looked upon as " the dangerous iron instrument," only to be used as a *dernier ressort* in desperate cases; men who use it rationally are not now designated " obstetric reprobates," and parturient women are not encouraged to endure the so-called natural suffering, which entails death to their offspring and injury to themselves. I need not now, therefore, as I did five years ago, fear to publish what conviction has led me to believe—that the forceps is a perfectly safe instrument in educated hands, that it is easy of application, and not only may, but should, be used in many cases which nature, acting with unnatural force, could terminate— in many cases of what is called natural labour, but ought to be designated supernatural, where the strength and endurance of the patient are tried beyond what is safe to either life. We now find the distinguished President of the Dublin Obstetrical Society coming forward and attributing the diminished frequency of ruptured

uterus in the Rotundo Lying-in Hospital to the greater frequency of instrumental interference; and on looking over the records of that valuable institution we find warrant for his words in the fact that while during the mastership of Dr. Collins the forceps was used only once in 694 cases,[a] during the last five years of Dr. Shekleton's mastership it was used once in every fifty cases,[b] while during the last three years the vectis and forceps were used once in about forty-seven and a-half labours.[c]   Dr. Churchill also, in the last edition of his well-known work, makes the following remarks:—" To those who like myself regard the wider employment of the forceps as the best mode of diminishing the frequency of the employment of craniotomy, it is a matter of rejoicing to find this instrument increasingly employed, and that with each enlargement of our statistics the death-rate of mother and child has diminished." The age of prejudice has, then, passed away; and although some eminent authors still hold out for " nature unassisted," and while some text-books for students still contain rules for their guidance which must be considered dangerous to maternal and infantile life, the periodic medical literature of the day teems with evidence of a more rational obstetric art.

I have already, in alluding to natural labour, stated my dissent from the opinion that labour attended with more than average pain should be so designated.   The suffering of a truly natural labour is very bearable, because the presentation yields to the force employed, which is commensurate with the necessity which exists for it; but when nature redoubles her efforts to overcome a difficulty, not only is the pain of uterine contraction increased, but the presentation, being slow to yield to the force, the latter is expended in full intensity on the head of the child and the structures of the mother. Pressure of this kind continued for any length of time is fatal to the infant,[d] and either causes rupture of the uterus, or contusion, inflammation, and sloughing of the vagina.

But, besides the local injuries which the mother sustains, a twofold effect is produced upon her general system by protracted labour or severe suffering; for as each hour passes and leaves her undelivered, her courage fails, despondency and anxiety take its

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[a] Quoted from Dr. Murphy's Midwifery, p. 275.
[b] Quoted from a paper by Dr. Sinclair, Dublin Quarterly Journal, Aug., 1861, p. 60.
[c] Quoted from a paper by Dr. Halahan, Dublin Quarterly.
[d] See paper by Dr. Hamilton, of Falkirk, in the 2nd vol. Medico Chirurgical Review for 1853.

place, she cannot be persuaded that everything is right, and she begins to sink under a condition of the system similar to that which works the ruin of an army in retreat, and is best expressed by the words, " demoralised, dispirited, and broken down."

Secondly.—The suffering itself exhausts the vital energies of the system, and saps the foundation of life.   Nature has provided against the destructive effects of acute suffering by entailing as its consequence a faint, which is, in point of fact, a mimic death, and often, we may believe, by blunting the sensibilities, arrests a progress towards real death.   But there is no such relief from hard labour; its effect upon the nervous system continues unabated or increasing in intensity, until, even after the birth of the infant, the mother sinks from the nervous shock which supernatural labour has entailed.   The first recorded death from parturition was caused by hard labour; we find it in the simple and affecting narrative of the death of Rachel (*Genesis* xxxv., 17 and 18):—" And it came to pass, when she was in hard labour, that the midwife said unto her, Fear not; thou shalt have this son also.   And it came to pass, as her soul was in departing (for she died)," &c., &c.   Had the forceps been used in this case we may presume, from the experience of those who use it to terminate " hard labour," that the result would have been different.[a]

It would be very desirable to have some fixed rules to guide the student as to when artificial delivery should be undertaken in any given case of tedious labour.   In the days of prejudice, which have now happily almost passed away, certain fixed regulations as to the duration of the second stage, and the symptoms of powerless labour which existed, were looked upon as the landmarks which should

[a] See the statistics of Dublin Lying-in Hospital, as quoted by Drs. Johnston and Sinclair, and the result of the present practice compared with that of former years when the forceps was little used.   See also the result of Dr. Hamilton's practice, before referred to ; of Dr. Lawrence, of Montrose ; of Dr. Ryan, of Dublin ; of Dr. Beatty, quoted by Churchill ; of Mr. Crosse ; of Professor Simpson, Dublin Quarterly Journal, August, 1861, p. 60 ; of Dr. Swayne, British Medical Journal, September 6, 1862, &c., &c., all of whose practice is very different to that recommended by Ramsbotham and Murphy, the former of whom lays down, among his rules for the application of the forceps—" Countenance anxious ; pulse 120, 130, or 140 ; white slimy or dry brown tongue ; great tenderness of uterus ; green discharge ; heat and tumefaction of vagina," and perhaps " head locked for four hours, and made no progress for six or eight ; coffee-ground vomiting ; hurried breathing ; delirium, or coldness of extremities, all of which would warrant us in applying the forceps, even if labour had not lasted twenty-four hours, or even twelve."   It must be hard labour, indeed, that would cause these symptoms; and it would be difficult to save the life of the patient if the practitioner was hard-hearted enough to allow them to commence.

indicate the time for action; but we now know that the first of these is only a very unimportant part of the data which should guide us, while the last ought always to be anticipated. We must ignore, therefore, the old rules, and at the same time admit our inability to supply their place by anything very definite, because so many elements enter into the question as we now understand it, so much depends on the constitution of the patient and the skill of the operator, that much must be left to the judgment of the practitioner.

The question is entirely a comparative one, as the issue to be decided at the bedside is not whether nature can complete the delivery, but whether nature or art can do so with least risk to mother and child. But while we cannot lay down rules we can enunciate certain principles to be borne in mind, besides those which relate to the stage of labour when this delicate question has to be determined :—

1st. The amount of pain already endured, and the ability for further endurance.

2nd. The *morale* of the patient.

3rd. The amount of expulsive force which nature has employed; its effect upon the presentation, and the further amount which may be expected.

4th. The relative capacity of the pelvis.

5th. The extent to which the perineum and other soft parts have yielded, and the probability of delay causing further dilatation, or per contra, inflammation, swelling, or rigidity.

6th. Whether if a mechanical obstacle exists it is removable.

7th. The condition of the fetal heart; and lastly, the skill of the operator.

Experience alone can determine most of these points; and it seems to me that if a definite rule must be laid down it should be, that tedious or laborious labour is, *per se*, an indication for operative interference, unless, on passing all the principles now laid down in review before his mind, the practitioner believes nature more competent safely to complete delivery than himself.

I shall conclude these remarks by a few words on the mode which I adopt when using the forceps,[a] as each days experience confirms me in the belief that it has practically many advantages. Having satisfied myself that the fetal head is in a natural position in the

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[a] For a description of the forceps I use see paper on The Use of the Forceps before referred to.

cavity of the pelvis, I pass the two first fingers of my left hand as high as possible along the sacrum; next, holding the warmed and well-soaped *lower* blade of the instrument *loosely* in my right hand, I direct it along the introduced fingers between them and the head; when the handle, of course, points towards the thighs of the patient. Next, the index finger of the left hand is gently pressed upon the upper part of the back of the convexity of the blade, while, at the same time, the handle is gently raised in the right hand and *slowly* carried backwards with a sweep towards the perineum; I invariably find that by a combination of these motions the blade, resting on the index finger as a fulcrum, slowly traverses the fetal head and *finds its own way* to the position most suitable to the circumstances of the case, and that the handle of the instrument, when fully introduced, lies against the anterior edge of the perineum. It is at this stage that I find the advantage of having commenced with the *lower* blade, for instead of being obliged to introduce the second blade between the perineum and the first, or else, after its introduction, to cross one handle over the other, the assistant can hold the first in its place, posteriorly, where it is not at all in the way of subsequent operations. Again the first fingers of the left hand are passed along the sacrum, and guided by them, as before, the second blade is introduced, while the fingers, this time below the convexity of its edge, act again as a fulcrum. Now instead of raising the handle it is greatly depressed and carried towards the perineum, allowing the blade to traverse the upper convexity of the head, and take its position in a manner similar to the first. No force is required in any part of the operation, as the blades, guided by the wall of the uterus on one side, and the fetal head on the other, cannot fail to insinuate themselves into the chink between the pelvis and the head, and taking up a position exactly opposite each other lock readily as soon as the handle of the second approaches the perineum.

ART. XIV.—*Remarks on a Common Herpetic Epizöotic Affection, and on its Alleged Frequent Transmission to the Human Subject.* By DR. WILLIAM FRAZER, Lecturer on Materia Medica to the Carmichael School of Medicine, &c.

EARLY in March I was requested to attend a little child, about four years of age, who had contracted an eruption of the skin from

playing with a calf whilst visiting at a farm-house on the borders of Kildare and County Wicklow. I was informed that the rash had been much worse, but was now improving under the use of a mixture of linseed oil and castor oil applied topically, in fact the same treatment which had been successfully employed with the diseased calf. I found a well developed and characteristic patch of herpes circinatus or ordinary ringworm occupying the upper and back part of the fore-arm and elbow, fully three inches in length and above one and a half inch wide, healing in its centre, but surrounded by a pale pink erythematous border that had passed into the chronic stage and was throwing off small scales, and ceasing to spread. A few days treatment with very dilute ointment of red iodide of mercury perfectly removed all trace of the disease in the same manner that I have known it invariably to succeed in ordinary cases of this herpetic affection. As my acquaintance with cutaneous maladies occurring in animals was limited, my interest was much excited by the information I received as to the frequent appearance of this contagious herpetic eruption in calves, and its alleged transmission to the human race, which was said to be common and notorious. I therefore sought for some more information, and think that the results of my inquiries may possibly interest others in the profession. Should our country friends, who must know far more of this subject than those whose daily life is restricted to a town, be able to throw additional light upon the matter, they may be assured that, for one, I shall feel most grateful for their correction or confirmation of what I state.

So far as the history of the present case goes, the source of the disease appears to be ascertained beyond the smallest doubt. The farm where it occurred is one of the best conducted in Ireland, and is celebrated for the high character of the stock. For months previous no herpes whatever had existed amongst their own cattle; the calves, two in number, which were infected with the herpes were fresh purchases of high bred and expensive animals; both had the disease in a well marked stage on their face and neck which was immediately recognized; they were purchased whilst the child was on a visit, and it was continually, from that time, in the habit of playing with them and of feeding them; its arm soon became attacked; and previous experience had taught the family that the cause of the infection was the rash upon the animals which they knew to be contagious, spreading alike to men and cattle who came in contact with it, and, as they informed me, when neglected, it would cause " very

sore spots" on the face, beard, and limbs of those who were its recipients. The ordinary remedy they were in the habit of applying on the farm was mercurial ointment, though of late they have tried the mixture of linseed oil and castor oil, as they considered, with success. The ringworm appears always to show upon newly purchased animals; and, though it is liable to extend through their own stock, the impression seemed to be that it was invariably propagated by direct contagion, and never originated spontaneously.

The inquiries which I have made in different quarters would induce me to believe that epizöotic herpes must be very unequally distributed; it has extensively prevailed in some localities like an epidemic; others, as certain parts of Wicklow and County Dublin, were reported to me as being perfectly free from its presence; but this interesting question would demand far more research than I have been able to enter upon as yet. In the Counties of Cavan and of Monaghan it seems to have been of common occurrence and generally recognized; I therefore append two reports relating to parts of these counties which were written by pupils and personal friends of mine. I have every confidence in the strict accuracy and powers of observation of these gentlemen, who were neither of them aware that the other was engaged in writing on the subject or of my own special interest in it. I merely enquired from each separately, did they know anything about the occurrence of ringworm or herpes in calves, and its usual treatment, and, if so, to write for me a brief account of the disease as it had fallen under their notice, and, particularly, did they think it liable to attack human beings.

Observations on Ringworm in Cattle. By Mr. PATRICK BRADY, *as he has observed the disease in County Cavan.*—Ringworm chiefly occurs in calves and young cattle, but is not unfrequently seen in the cow. It is noticed most frequently during the Spring months and in the early part of Summer; it forms round spreading patches, reaching from less than an inch to two or three inches across, smooth in the centre and rougher round the border; they continue to extend for some time, then dry up, and finally the spot appears covered with a crust of scales, thickest outside; the hair covering the part attacked falls off, leaving the skin bare, and so produces much disfiguration. The favourite situation of the eruption is about the eyes, the roots of the ears, and on the neck, but it may also occur upon the body and over the limbs. There can be no doubt that it is highly infectious, as when a cow or a calf having the disease is

brought amongst others that are not affected by it, the eruption speedily appears amongst them, perhaps in consequence of their rubbing themselves against the same post as the infected animal.

Man is not without danger of being infected either. Herds, milkmaids, and children that are in the habit of playing with calves are most frequently attacked. When the rash appears on the human subject it is very difficult to manage. I have seen it most often on the heads and arms; it may also occupy the face, and is particularly troublesome when it gets into the beard; sometimes it appears on the trunk of the body, though far less frequently than on the hands, arms, or face. In man the eruption is very similar to what we observe in the calf; it comes out as a reddish coloured spreading round spot, which may extend until it forms a patch like a " fairy ring " of considerable size; its course is very chronic; often the part gets inflamed, throws out a crust, and cracks if neglected, forming fissures; at other times the crust dries and appears as a mass of scales.

Treatment in Man.—In some cases I saw the liq. plumbi. subacet. used with success; compound tincture of iodine is another local application which I also saw used with good results. When very obstinate the part is brushed over twice in the day with strong acetic acid, and artificial Harrowgate water given internally; I scarcely ever have known this to fail in curing the disease.

Treatment in Cattle.—For cattle the only treatment I ever saw used was some irritating ointment; the best appeared to be a preparation of corrosive sublimate made from bichloride of mercury, twelve grains; lard, one ounce; powdered white hellebore, sixty grains.—Mix.

Ringworm in Cattle. Notes by Mr. James Whitla, *as he has observed it in County Monaghan.*—In some parts of the country the practice is followed, to a limited extent, of buying up, at a very cheap rate, numbers of calves from four to eight or nine months old, about the middle and end of Autumn, and placing them through the Winter to graze, in large batches, on very poor grass land. Towards the end of the Winter they are generally sold off to other proprietors to be fattened for the butcher, army contractor, &c. The state in which they come off their Winter quarters is in the majority of cases most miserable—they are almost completely devoid of flesh, drooped, listless, and bearing evident marks of starvation; they are *totally denuded of hair round their*

eyes, and large patches over the body in the same condition, nearly all the patches being of a circular form; such a state is easily altered by a little better care, and the due admixture of salt with their fodder. I wish to draw your attention to this, because it is a condition of things very often confounded with genuine ringworm in cattle, but it must be looked on as altogether different; still, this much is certain, that all cattle in such bad condition as I have described, are vastly more liable to outbreaks of true ringworm than those which are housed during the Winter, well fed, and in good condition when they are placed out for grazing in Spring.

Ringworm in cows or calves commences with a single spot, which after a few days develops itself into a small ring-like scaly eruption, growing larger by additions to its outer circumference, so that it increases in a manner perfectly similar to " fairy rings " in a meadow; at the same time the hairs fall out, and the interior, losing its scales, appears comparatively smooth. If the first spot of the eruption happens to be seated on a part of the animal within reach of being licked by the tongue or lips, other spots are speedily produced over different parts of the body; and in the course of a week or ten days may be seen reaching from the size of a fourpenny piece to that of a ring of two or three inches in diameter. At the same time the animal fails in flesh, its milk is diminished, and its aspect becomes pitiable; the irritation and itching of the several spots keep it in a state of continual motion—licking, twitching, and scraping with the hoof. I cannot doubt that this eruption is capable of being widely and rapidly disseminated by contact alone, for during the second year of my apprenticeship in the North I had abundant evidence of the fact—whole tracts of country, let in grazing, becoming annoyed with the pest of ringworm, owing to the introduction of one infected animal from a different locality.

That ringworm is constantly transmitted to the human subject admits of no doubt, for during the first prevalence of the disease in the cattle the animals suffering from it were somewhat too closely, and at the same time carelessly, examined by their owners, servants, and others. The consequence was that it soon became nearly as common amongst the people themselves as with the cattle, first appearing, as a rash, upon the most exposed parts, the back of the hands, the face or neck, and if unchecked, spreading from these to other parts of the body, irrespective of position.

At this distance of time (some four years) I cannot, unaided by notes, describe minutely any particular cases, but they were

numerous, and the eruption presented identical features both in men and animals. However, I remember one man who was attacked in a very severe manner, and his case is the more worthy of being cited as the people in his neighbourhood were convinced that he died from the disease communicated, as all knew, by the cattle. He was manager and caretaker on a farm held by a widow; the cows, calves, and, I believe, bullocks under his charge, had been affected with ringworm for some time. On the recommendation of a locally-celebrated " medicine man," he applied to the cattle strong mercurial ointment, rubbing it several times in the day to the spots of eruption. In a short time the rash appeared on his hands, face, neck, and arms, several developing themselves in a very severe manner about the jaw and the angles of the mouth. Having found his blue ointment so successful with the cattle, he commenced its free application to all the spots on himself, regardless of situation, appearance, or condition, and in a short time had banished most of them; but so severely salivated himself that he died in about a fortnight. Such a case occurring in the neighbourhood of a country town naturally caused a panic, and led to a more careful and better advised mode of treatment, before which the disease gradually gave way. This consisted in the use of iodated sulphur ointment, varying in strength from five to forty grains of sulphur iodatum, mixed with simple cerate, one ounce. The same treatment invariably proved successful when tried with those persons who had been infected from the cattle, occasionally using mild astringent ointments where they appeared to be indicated, such as unguentum zinci and unguentum calaminæ.

The different forms of epizöotic eruptive disease have not as yet received from the medical profession the attention that they would appear to deserve; they are either totally ignored or passed over in the most superficial manner in all our numerous treatises on cutaneous medicine, nor do the usual veterinary manuals greatly aid our study of them; their descriptions of skin diseases are often loose and worthless, and their pathology and practice most defective. In one of the latest of these publications, which may be taken as representing the state of our literature in the present day relating to bovine maladies, herpes in cattle is described with some approach to accuracy; we have also a clear statement of its decidedly contagious nature, and of its liability to infect either animals or man—I allude to the recent work of Mr. J. R. Dobson—*The Ox,*

his Diseases, and their Treatment. London, 1864. Published by Messrs. Longman and Co., from which the following extract is taken :—

" Ringworm, although a disease almost unnoticed by veterinary authors, is by no means rare in young stock, and is occasionally found in older animals. Debility and poverty seem to be the great predisposing causes. It is in fact a disease of deranged nutrition, or to use common parlance, of ' poorness of blood.'

" Ringworm is, in the author's experience, a very contagious disease, although this is denied by very eminent medical authors. In fact, in two well-marked instances the author has witnessed its transference from the horse to man, and more frequently from the ox to the horse. Although the name ringworm might lead the non-medical observer to suppose it owing to some living parasite, it is not so. The disease is centred in and owing to an affection of the skin itself.

" Several varieties of the disease are described by medical authors, but probably the ox is not liable to more than one—at all events, a description of the more common affection will suffice for all practical purposes.

" The symptoms of ringworm are the appearance of a number of round scabby patches, about the size of half-a-crown, which, when peeled off with the finger, exhibit a rawish surface underneath, discharging a yellowish exudation, which, when dry, forms the scab above alluded to. Occasionally one or more of these rings run together, and form a patch of some magnitude, although a well defined *ring* may always be seen. They are usually found about the head and neck, the back and thighs, but, surrounding the eyes, they are often found in great numbers, giving a most unsightly appearance to the animal.

" The treatment should commence by a careful attention to the diet, and an exhibition of more generous food. Medical alteratives may, too, be administered—as, flowers of sulphur, one ounce, black sulphuret of antimony, half ounce in one powder, which may be given daily. With regard to local treatment, the mange liniment may be applied—oil of tar, oil of turpentine, linseed oil, equal parts, rub well into the skin every other day ; or one of the two following applications—tincture of iodine, painted on with a camel hair brush after the scab has been removed, or lunar caustic, twenty grains,

distilled water, one ounce, to be *well rubbed* in with a small tooth brush. These may be alternated with the solution of bichloride of mercury, the ointment of hellebore, or any of the stronger acids. Cleanliness in this, as in all other skin diseases, is essential."

Although the list of our systematic treatises afford us so limited and defective a description of this important eruption, yet it has not been altogether overlooked by Continental authorities, and I would particularly refer to a paper by M. Gerlach, Professor at the Royal Veterinary School of Berlin, which contains much more definite views respecting the nature and character of epizöotic herpes. The essay is briefly reported in the valuable periodical edited by Mr. Gamgee, *The Edinburgh Veterinary Review*, Vol. II., for 1859-60. M. Gerlach gives an admirable description of the eruption, its appearance and progress, and satisfactorily identifies it with herpes circinatus (the tinea circinata of writers, when it occurs in the parts covered with hair of human beings), for he procured from its crusts the same parasitic vegetative growth (trichophyton tonsurans) which is present in that disease. He further effected its transmission to oxen, horses, and dogs, but failed to induce it in sheep or pigs. He inoculated his own arm, and also some of his pupils, with the crusts taken from oxen, and in every instance a patch of herpes circinatus was developed, the crusts of which " contained the vegetable parasite observed in the *dartres* of the ox." M. Gerlach's paper enumerates several authentic cases of the transmission of the disease to human beings from animals, derived from French and German sources, which it is unnecessary to particularize, as the abstract of his essay is easily accessible. I have not as yet had any opportunity of examining the microscopic appearance of the disease in the calf, but I obtained some hairs which were taken from the vicinity of the affected part in a calf from the County Cavan, and around their bulbs I got distinct proof of the presence of a parasitic cryptogam that was apparently identical with trichophyton, but in too imperfect a condition for me to figure it. As for the child, when I was consulted the eruption was already disposed to heal, and therefore unfavourable for microscopic observation.

ART. XV.—*On the Internal Administration of Dilute Hydrochloric Acid in Chronic Forms of Gout.* By JAMES F. DUNCAN, M.D., Physician to the Adelaide Hospital, and to Simpson's Hospital, Dublin.

EXAMPLES of genuine gout are of rare occurrence in our Irish hospitals. This, I believe, is not the case in similar institutions in the large towns of the sister country. The difference in the habits, diet, and peculiar beverages of the labouring classes in England and Ireland sufficiently accounts for this diversity. In England animal food is more largely consumed, cheese is a staple article of diet, and fermented liquors are the popular beverage in a much greater proportion than the simple but more stimulating distilled spirits. In Ireland, on the contrary, the diet is poor, consisting in great part of vegetables, especially bread, potatoes, and tea; cheese is seldom touched, and whiskey reigns supreme over small beer and XX. I mention these facts, which are too well known to be disputed, for the purpose of explaining why it is I limit the remarks I am about to make to the chronic form of gout, not having yet had an opportunity of making any experiments upon the more acute and characteristic phases of the complaint since my attention was first directed to the subject; yet I have no reason to think that, with proper precautions as to preparatory and other treatment, the remedy which I now propose may not be of equal benefit in acute cases. Simpson's Hospital, an institution to which I have now been attached for upwards of fifteen years, was founded, nearly a century ago, for the relief of reduced citizens who, in addition to the privations of poverty, had to contend with either blindness or gout. Among its inmates, therefore, we are always provided with a sufficient number of characteristic specimens of the disease in its fully developed forms—the inmates being elected for life—and these, as is usually the case, exhibiting, from time to time, fresh paroxysms of an acute attack, passing off again as soon as they have spent their force, and leaving the unfortunate sufferer less able to resist the next invasion than he was before. Here, then, has been the principal field of my observations; and, having been constantly disappointed in the effects of remedies recommended by various authors as appropriate for the purpose from their peculiar action in the pathogenic poison of the disease, it affords me much gratification to be able to speak in highly favourable terms of what most persons would consider, *a priori*, to be unsuitable.

There can be no question that the tendency of professional thought in the present day is to a modified humoral pathology; but there is this difference between the theoretic views of the present and the former generation, who were imbued with the same notions, that whereas the latter rested upon mere conjecture, the progress of vital chemistry has effectually demonstrated the actual existence of morbid changes in the fluids of the living organism; one of the most triumphant instances of this demonstration occurs in the case of gout, when the discoveries of Wollaston at the close of the last century, followed up, a few years ago, by those of Garrod of London, leave no room to doubt that the presence of free lithic acid in the circulating system is an essential feature of the disease.   It remains to be seen, however, whether the discovery of this fact, all important as it is, may not have led our minds astray from the true pathology of the complaint, causing us to fasten our attention upon a second and subordinate link in the chain of morbid causes instead of leading us to look higher up the scale for the discovery of the *primum mobile.* One thing is certain, that the practical effect of Dr. Garrod's discovery has been to lead the profession generally to look for some means of neutralizing the noxious element, converting it into a salt of augmented solubility so as to enable it to be eliminated with greater facility by the kidneys.   The idea of using any form of acid as a means of affording relief seemed by the very elements of the question necessarily set aside.   Dr. Garrod's theory is that the essence of gout consists in an impairment of that function of the kidney which is concerned in the elimination of lithic acid, so that the latter not being carried off as it is formed, as is the case in health, accumulates in the system, just as urea does in albuminuria where the analogous function of eliminating urea seems to be impaired by a similar morbid influence   It is not necessary to point out that this theory is a very important modification of the humoral pathology, and gives abundant room for the play of the other vital forces of the system. Dr. Garrod rests this opinion not merely on the fact of the accumulation of lithic acid in the blood, which he has demonstrated, but upon the equally important fact that the quantity of lithic acid excreted in the urine is always diminished during the access of a fit; that it is again increased when the fit is passing off; and that in the true gouty subject the quantity thus excreted is usually below the average of the healthy individual.   But these facts may be explained differently.   The accumulation of lithic acid in the circulating fluid may be due to an increase in the amount formed in the digestive

system, the result of an imperfect action in those vital forces upon which the formation of a healthy chyle depends; and the diminished excretion of the urine may be the result of the febrile excitement set up in the system by the presence of the poison, as we know happens with every form of fever, instead of being, as Dr. Garrod's theory supposes, some specific action peculiar to gout.

The views just enunciated appear to me to tally more fully with what we know of the nature of gout, of the circumstances under which it occurs, the evidence of impaired digestion which attend it, and the symptoms to which it gives rise, than Dr. Garrod's; and, having met with the following case in March, 1863, which resisted the alkaline treatment with bark and colchicum, I was induced to consider whether something might not be done which, by increasing the efficiency of the assimilative process, might have the effect of preventing the formation of lithic acid in excess, and so more effectually counteracting the morbid influence than by attempts at neutralization after it was formed; under this impression I resolved to give a trial to dilute hydrochloric acid as forming naturally a very important constituent of the gastric juice.

Mr. H., aged forty-four, was admitted into the Adelaide Hospital, March 9th, 1863. He was a large man, of full plethoric habit—an Englishman, with the characteristic Saxon head and face, and everything about him bespeaking the very conformation of the gouty subject as described by Cullen. He had been station master at an important town in England for several years, a situation involving much mental labour and anxiety, but admitting of little healthy exercise, as he was always actively employed at his post for sixteen hours in the day. He was exposed to great alternations of temperature. He lived well, but temperately, his principal drink bitter beer, which he took freely. About eight years previous to admission he had, for the first time, an attack of pain in the right ankle which yielded to simple measures. Three years after this both ankles were affected; then he lay up for about a week complaining principally of the pain and helplessness of the joint. Since that time the attacks have been increasing in severity while the intervals between them have been diminishing. In subsequent fits the elbows, wrists, and knees were attacked, but on two occasions only were the small joints of the fingers implicated. The pains would sometimes shoot rapidly from one joint to another, and on one occasion he felt them at the back of his head and neck.

He came into hospital suffering from intense burning pain in both knees, and was so helpless that it was necessary to carry him up stairs; which was no easy matter from his great weight and size. He had, in his right ear, one or two of the characteristic tubercles to which attention has been called by Dr. Garrod. In a day or two the pain left his knees and settled in his wrists, the left one especially, the appearance of the joints being but little altered; the swelling slight, without redness. The treatment first used with him consisted of a rhubarb aperient draught; bark, with carbonate of potash in effervescence; quinine and colchicum in pills, the affected joints being covered with wadding saturated in warm laudanum.

Finding that he derived no material benefit from any of these measures I was induced, on the 11th March, to put him on a mixture containing two drachms of dilute hydrochloric acid, two drachms of compound tincture of cardamoms, and seven ounces and a-half of infusion of cascarilla, of which he was directed to take an ounce every third hour. In ordering him this mixture I carefully avoided adding to it anything, such as colchicum, which might be conceived to effect the intended benefit; the carminative was added as a precaution to prevent the acid disagreeing with him, and the cascarilla as assisting to carry out the idea of improving the digestion. This mixture agreed with him so well that he got rapidly better, and on the 24th he had so far recovered as to get out of bed for the first time. Here, however, he experienced a chill, and the pains returned to his wrists again; twenty drops of colchicum wine, with thirty of laudanum, acted like a charm, removing the pain almost immediately; and under the combined influence of the colchicum and hydrochloric acid he was discharged cured.

I saw this man walking in town in the course of last Summer. I regret that the clinical record of the case, as taken by the pupil at the time, was not more full; but I think it better to copy the notes as I find them, than to attempt to add to them from memory; and I also regret that no effort was made to verify the distinction between gout and rheumatism laid down by Dr. Garrod, by testing the patient for free lithic acid; but I think the general features of the case, the presence of the characteristic tubercles in the cartilage of the ear, and the effect of colchicum, all establish the point that it was an example of chronic gout sufficiently for our purpose. And whatever may be thought of the theory here started, enough, I

think, has been said to show that a remedy hitherto considered inadmissible may be tried with safety and advantage. Since that period I have had many opportunities of employing the acid treatment in what I considered suitable cases. Miss ———, a friend and relative of the late Dr. Mayne, became my patient after his death. She suffered from anomalous pains in various parts, which I considered gouty, because there was a hereditary tendency to that disease, and there were evident symptoms of gastric disturbance. Pain and flatulence after eating, foul tongue, &c. She was advanced in life, of sedentary habits, and, as her sister informed me, had a large appetite, though abstemious as to every kind of drink. On telling her the remedy which I proposed giving her, she said, " Acids never agree with me." But having made the trial she found that this acid did agree with her, improving her digestion, giving buoyancy and tone to her spirits, and removing her pains.

An elderly gentleman, of active habits of mind and body, had one attack of gout when very young, brought on by eating freely of some agreeable sweetmeats. Since that period he enjoyed almost uninterrupted health, and no return of the disorder. A few years since he suffered from eczema, which annoyed him very much, and he has, at times, had attacks of a bronchitic character, which, I have no doubt, are more or less gouty, as he has a large appetite, and eats freely of things which would certainly disagree with most persons; but, as he says, nothing ever disagrees with him, he does not see that there could be any connexion between the pulmonary affection and his manner of living. Last Spring I put him on a mixture consisting almost solely of dilute hydrochloric acid (he can scarcely be got to taste medicine), and he, at once, admitted that it was of the greatest use to him, promoting expectoration and relieving his breathing. I have not kept notes of my cases at Simpson's, but the following instance, which has recently occurred, may be taken as a fair example :—

E. I., aged sixty-three, has been an inmate of the institution for many years, during the last two of which he has been confined to the infirmary and bedridden, suffering from chronic gout, with occasional exacerbations affecting his knees, shoulders, wrists, and fingers. Was in great agony December 13, 1864, the whole of the right wrist and right shoulder was swollen, painful, and of a pinkish red colour. There was high fever present at the same time. He

was put on a mixture containing seven ounces and a-half of cascarilla, and two drachms each of dilute hydrochloric acid and tincture of colchicum, half an ounce to be taken three times a-day.

December 15.—On entering the ward this morning he said to me, " I am well," and certainly he was much better; the wrist was greatly reduced in size; the colour was pale; he could move the joint and his fingers; the right shoulder was less painful, and the general fever reduced. He said the medicine acted on his kidneys. He complained of the bitterness of the medicine, and, after the urgency of the symptoms was removed, could scarcely be got to continue it. By representing to him, however, the benefit which I expected him to derive from it, he finished the bottle, and then I presented it to him in a more agreeable form, making it, in fact, merely a weak solution of the acid, and this medicine, which he is still taking, continues to agree with him; his joints are gradually diminishing in size, and the knees, which were almost immovable, are recovering their power, so that he can stretch them in the bed, and he talks confidently of being able once again to move about.

Art. XVI.—*Cases of Traumatic Tetanus.* By Mr. Robert Persse White, F.R.C.S.I.

The following cases, which have occurred in my practice during the last two years, are copied from notes taken at the time:—

I.—On Thursday, July 9th, 1863, I was requested to visit Miss M. H., a fine little girl of two and a-half years of age. Her previous health had been good, and her family all healthy, except one girl of about ten years of age, who suffered for some time from a severe attack of chorea. On examination I found the right thumb bruised in a shocking manner, the bone of the ungual phalanx fractured close to the joint; and, although the soft parts were not torn, the injury seemed to be of such a character as to give no hope of recovery, except by the removal of the part by the knife, or by the slower and more dangerous process of sloughing. On the previous evening, whilst playing in the garden, a large iron boiler, which had been resting against a wall, fell on her, throwing her down and trapping her thumb just beyond the last joint, thus causing the severe injury described. Amputation of the injured part was proposed, but the parents refused consent, and there was no course left but

to treat the case as it stood, and to wait. I need not give daily details of the case. Until the 21st all went on most favourably; she suffered no pain; a line of separation formed, and on the 21st a portion of the slough came away, leaving behind it a long piece of sloughy tendon, the rest of the wound looking quite healthy. Next day when visited she was asleep, and so quiet that I did not disturb her, her mother saying that all was going on well Up to this time there had been no general treatment, her health being very good; no opiate had been given, as there was no pain.

23rd.—On visiting her early this morning I found a great change; the child had passed a dreadfully restless night, frequently starting in her sleep, screaming, and jerking about. Her face showed at once what had occurred, for the features had already assumed the unmistakable expression of tetanus—the contracted brow, peering eye, and widened jaw; the jaws were slightly contracted, the masseters hard and permanently unyielding, as also were the muscles of the back of the neck; whilst the other muscles engaged—those of the abdomen, back, and legs—were only affected during the spasms. She complained of a constant pain in the epigastrium; there was some difficulty in swallowing, with a tendency to eject fluids; any attempt to move or to examine her brought on a spasm, and caused her to cry out, each time referring the pain to the epigastrium; pulse 108; bowels moved yesterday, but still I ordered a purgative enema, and to have one grain of calomel with one-sixth of a grain of opium every fourth hour; the wound to be dressed with a linseed-meal poultice, moistened with tincture of opium; to have chicken broth. At my evening visit I found no change; to have six drops of Battley's sedative in some flaxseed tea, as an enema.

24th.—The symptoms have all increased in severity; she lies on her back in a large cradle, and the least stir, even the moving of the cradle, brings on a spasm. She now seems to have a severe spasm about every hour, never sleeping longer without the scream, which always marks the spasm; but in the intervals she has frequent slighter jerkings, with facial contractions. During the spasm the whole body is drawn backwards, the limbs, to the very toes, being affected. The abdominal muscles are now constantly rigid, the jaws more contracted, but still she can open them a full half-inch, and she can swallow well; pulse 120. To continue treatment as yesterday; to have beef tea and a little wine.

27th.—During the last two days her symptoms have been the same as on the 24th. She has taken fourteen grains of calomel, and

refuses any more medicine, the effort to give it causing spasm; her bowels are kept free by simple enemata; she is still very restless at night, and unwilling to be touched; there is slight fetor from the breath; pulse 120. To have four drops of Battley's sedative in a teaspoonful of syrup every fourth hour. Evening.—She could only be got to take one dose of the medicine, so I ordered eight drops of Battley in an enema to be given twice daily; to have wine and beef tea. As the wound looked sloughy on yesterday, I ordered it to be dressed with the carrot poultice.

28th.—Her mouth is now sore; glands under the jaw swollen and tender; there is marked fetor from her breath; she passed a quieter night, having had only two severe spasms. Evening.—All symptoms greatly abated; abdomen soft and yielding at times; pulse 108; takes wine, beef tea, and milk freely.

29th.—Rested well at night, had only two slight spasms; allows herself to be lifted up; mouth still tender; at times complains of pain in the epigastrium; rests all day in her mother's or nurse's lap, partly sitting up.

August 1st.—A steady improvement since last date; all spasm has ceased; can open her mouth freely; bowels regular; epigastric pain quite gone; wound healing at edges; pulse 80—in fact quite well, except for the peculiar expression of face, which becomes more marked when she laughs. The Battley was continued in enemata twice each day up to this; now to have only the enema at night. The sloughy portion of tendon has come away, leaving a small portion of bone to exfoliate.

2nd.—Can walk across the room.

5th.—All treatment discontinued. She now plays and runs about with the other children.

15th.—The bit of bone has come away; wound healing slowly; her health is now quite restored. The wound was not quite healed until the beginning of September.

II.—On Sunday, November 5, 1864, Master D., a fine well-grown healthy boy, of six years of age, was brought to my house, having just received a severe lacerated wound on the front of the left leg, below the middle. His previous health had been good, except that he frequently suffered from sharp neuralgic pains in his back and various other parts of his body. His parents and family are all very healthy, but some of them are of a peculiarly nervous temperament.

On examination I found an extensive lacerated wound, of a triangular form, on the front of the leg, just below the middle; the apex of the triangle pointed upwards; each side measured two and a-half inches; the flap was drawn downwards more than two inches, laying bare the fascia and muscles of the leg, and a portion of the periosteum was torn from the tibia; there was no hemorrhage, and he did not seem to suffer any pain. The wound was caused by a large flag, with a V-shaped piece broken out of it, falling on his leg.

I brought the edges of the wound accurately together with five points of silver wire suture, and ordered warm water dressing. I saw him daily until Saturday, November 19, when he was going on as well as possible, the wound nearly healed, a small slough which had formed at the apex of the wound having come away some days before; the day being very fine he was out for a drive.

Sunday, November 20.—It was late in the afternoon when I visited; his family thought him quite well, but said he had no appetite, attributing that to his having had a restless night. His appearance made me uneasy; he looked restless and anxious, but spoke and laughed freely. I merely ordered him a good purgative draught, as his bowels were slightly confined, and determined to visit him early in the morning.

21st.—He had a dreadful night; awoke at 10 o'clock last night in a strong tetanic spasm, screaming and frightened; it lasted only a few moments, and then he slept; but the same thing occurred at least seven times during the night. When aroused and spoken to he could give no explanation, except that " he felt that he should bite his tongue." His face has the peculiar tetanic expression—brows very much contracted, eyes nearly closed and peering, almost complete trismus, giving, in the most marked degree, the widened appearance to the jaws which is a characteristic feature of tetanus; his teeth are nearly clenched, but with a great effort he can open them about half-an-inch, so as to protrude a portion of his tongue, which is wounded by them. There was a broken tooth at the left side which pained him; this I removed, and also lanced his gums where a large back tooth was coming up. The facial muscles alone were engaged at this time, except during the spasms. To have calomel, one grain, powdered opium, one-sixth of a grain, in pill every fourth hour, and six drops of Battley in flaxseed tea as an enema at night; beef tea. I saw him again at twelve o'clock, and arranged for a consultation in the afternoon. At 4 30, p.m., my friend, Mr

Collis, kindly saw him with me. He was in much the same state as in the morning, except that there was now some rigidity of the muscles of the back of the neck and of the abdomen; his bowels were well moved twice since morning; he has not had any severe spasm since morning, but frequent twitchings and facial spasms; pulse 96. It was agreed to continue the plan of treatment which I had commenced.

26th.—Has had a bad night, four severe spasms and several slight ones. To continue pills, and to have the Battley increased to eight drops at night; a turpentine enema at 3, p.m.; pulse 104. Evening.—Bowels well freed before and after the enema; has had a quiet day; no severe spasm, but frequent slight ones, and much facial spasm. 8, p.m.—Has just had a dreadfully severe spasm; his mother at once gave him an enema with eight drops of Battley, as also two drops by his mouth.

23rd.—Had a good night; slept from 10 until 5, a.m., this morning without any spasm, but with frequent tremors, as if a spasm were coming on; at 5, a.m., he awoke in a severe spasm. He complains of pain in the epigastrium, and in the back of his neck and jaws; abdomen rigid; facial spasm frequent, and at times the head drawn backwards; bowels confined. To continue medicine. Evening.—Has had twelve pills; mercurial fetor from breath. Omit pills; enema as before.

24th.—Has had four spasms during the night; did not sleep as well as the previous night; his gums and tongue are now very sore, and there is a strong mercurial fetor; his jaws are still clenched; abdomen quite rigid; wound healthy, and nearly healed; bowels freely moved; pulse 92. Evening.—Had one spasm at mid-day, accompanied with great pain in his abdomen; his bowels were freely moved in the afternoon; he has had no pain since; abdomen much less rigid; his jaws open to nearly an inch wide. To have three drops of Battley in some syrup three times a-day, and ten drops in enema at night.

25th.—After I saw him last evening he had a very severe spasm, followed by great pain in his jaws, back, and legs. About 10, p.m., he got quiet, and slept for four hours, and at 5, a.m., this morning he had another spasm, but not so severe; he frequently grinds his teeth, and has some facial spasms still; his tongue is very sore where it was bitten, and prevents his eating, although he says he is very hungry. The Battley to be increased to four drops three times a-day; enema at night, as before; pulse 80. Evening.—

Very cross and irritable all day; slept a little this evening, and awoke in a strong spasm. It is now 8 30, p.m., and he is very quiet; he took little food to-day, and is even unwilling to drink. To have an alum gargle.

26th.—Slept quietly for some hours, occasionally rousing up and taking drinks of milk with egg beat up in it, getting it himself from off a chair beside his bed; he had a severe spasm at 4 30, a.m., and another very soon after; his appearance is much improved; bowels not moved yesterday; pulse 84. To have turpentine enema at 3, p.m.; continue Battley. Evening.—Got turpentine enema, which acted well; but in an hour and a-half after he had a severe spasm; he is now quiet and free from even facial spasm.

27th, Sunday.—Has had a quiet night; no spasm since yesterday afternoon; quite free from pain; can open his jaws wider; abdomen soft and yielding; his tongue is still very sore. To have the Battley now twice a-day; no enema at night; a weak solution of nitrate of silver was applied to his tongue. Evening.—Has had a very quiet day, no spasm; takes beef tea, wine, and milk and egg, but no solid food; sleeps well; bowels not moved.

28th.—Had a good night until 2, a.m., this morning, he then got very restless; at 4 a.m., the enema, with eight drops of Battley, was given, and in two hours afterwards he fell asleep, and slept until nine o'clock, when he awoke in a slight spasm; bowels confined. To have a dose of Gregory's powder. Evening.—Got the medicine but it did not act; to have a turpentine enema at once, and, in an hour after twelve drops of Battley in enema. He looks well, but there is increased difficulty in opening his jaws; this is attributable to his having cried a great deal during the day.

29th.—Slept well; no spasm; drank a great deal of egg and milk all the morning. Omit the draughts of Battley. Evening.—Did not take much food during the day; was very irritable; slept in the afternoon; and at 5, p.m., had three spasms in succession, slight in character, and of short duration; pulse 84. To have the Battley in enema.

30th.—Had a tolerable night; but at 7, a.m., this morning he had three slight spasms, similar to those last evening; drank much of his egg and milk this morning. To have one sixth of a grain of extract of belladonna three times a-day. Evening.—He took but little food all day; has had no spasm since 7, a.m.; looks well; is cheerful, but languid. Opiate enema at night.

December 1st.—No spasm since. Omit opiate enema.

2nd.—No spasm since; much improved.

6th.—Greatly improved; eats well, sleeps well; he now walks about the room.

8th.—Sleeps well all night; jaws almost as free as ever; his face has still much of the tetanic expression.

14th.—Discontinued the belladonna.

27th.—In every way quite restored to health.

The almost invariably fatal character of this dreadful malady has raised such doubts and uncertainty in the professional mind as to the course of treatment to be pursued, that I am induced to lay before the profession a record of these cases; both were cases of true acute traumatic tetanus, for the fact of the appearance of the affection, on the fifteenth day after the receipt of the injury, does not in the least detract from that character; nor did either of them in their progress show any tendency to become chronic; the first advancing steadily to convalescence from the fifth day, or, in fact, from the time when the system had come under the influence of the medicine. The second case, more obstinate in its character, perhaps, from the naturally nervous temperament of the boy, did not fully yield to treatment until, I may say, the eighth day. In both the same line of treatment was *steadily* pursued, the object being to bring the system under the influence of mercury, in a moderate degree, at as early a period as could be done by its internal administration, and, at the same time, using opium for its powerfully anodyne and antispasmodic properties.

There is nothing new in the treatment of tetanus by means of calomel and opium, but there appears to be much distrust shown towards its use, and, in fact, a tendency to try as many supposed remedies as can by any possibility be introduced into the system of the patient.

These cases ought to point out to us its great value, for in both the one simple line of treatment was pursued, and in both improvement undoubtedly began when the system was fully acted on; nor is the line of treatment altogether empirical, for Mr. Erichsen says:—" In all cases of fatal tetanus that I have seen, in which a careful dissection has been made, the signs of inflammation of a nerve communicating with the wound have been found; and the vascularity, which is often very intense, may be traced up the neurilemma, often to a considerable distance;" and all are aware of the powerful effect of mercury in controlling inflammatory

affections.   I am the more impressed with the value of the calomel and opium treatment from the remembrance of a conversation on this subject with the late Professor Porter and the late Surgeon Smyly, as one day we were watching the use of chloroform in a case of traumatic tetanus in the wards of the Meath Hospital.   Professor Porter remarked, that "calomel and opium was the line of treatment which in his experience gave the best chance of recovery," and Mr. Smyly fully concurred in that view.

The tendency of opium to accumulate in the system has before now proved a source of danger in tetanus, particularly when, as often happens, the bowels are obstinately constipated; so that it is most important to have them well freed in the earliest stage of the disease; and, indeed, all through the treatment turpentine enemata will be found of great value.

It will be remembered that at the close of Master D.'s case belladonna was had recourse to, but it was not until all severe tetanic spasm had ceased, and there only remained some contraction of the masseters and some facial spasm.

I have noted the nervous temperament in both families with the view of calling attention to the great necessity for caution in prognosis, and more than ordinary watchfulness on the part of the surgeon in any case of injury in such subjects.

ART. XVII.—*On Esmarch's Operation for Closure of the Jaws by Cicatrices*. By CHRISTOPHER HEATH, F.R.C.S.; Assistant Surgeon to, and Lecturer on Anatomy at the Westminster Hospital.

IN the *Dublin Quarterly Journal of Medical Science* of May, 1863, I brought before the profession the causes and treatment of immobility of the jaws, using as illustrations three cases treated in the Westminster Hospital by Mr. Holt and myself.   In Mr. Holt's case, and in one of my own, internal division of the cicatrices, with the subsequent adaptation of silver plates to the gums, gave very satisfactory results: in the third case I performed the operation proposed by Professor Esmarch, of Kiel, *i.e.*, the resection of a wedge of bone from the lower jaw in front of the cicatrix, thus

leading to the formation of a false joint. I have now to record a second case in which I have performed Esmarch's operation with a good result.

The subject of the contraction of cicatrices in the mouth, and their treatment, has attracted little attention among British surgeons, and even in the last published surgical works, *Erichsen's Surgery*, 4th Edition, 1864, and Mr. Pollock's Essay on Diseases of the Mouth, in *Holmes's System of Surgery*, Vol. IV. (1864), on mention of them is made; in Paris, on the contrary, the question has attracted much attention, and has furnished the topic of frequent discussions at the Société de Chirurgie. Since the date of the publication of a paper upon the subject by M. Verneuil (*Archives Générales*, 1860) several operations have been performed by French surgeons, but apparently with but little success, since in cases operated on both by the method of Esmarch and Rizzoli re-union of the divided jaw has taken place.

Thus, on the 4th February, 1863, M. Boinet brought before the society a little girl on whom he had previously performed what he terms Esmarch's operation, (but which appears to have consisted in the simple division of the jaw, recommended by Rizzoli, and not the removal of a wedge of bone, as originally proposed by Esmarch), and in whom the bone had re-united. M. Deguise thereupon quoted a case in which he had removed a centimetre and a half of bone with the same unsatisfactory result, and expressed a doubt whether a single successful case could be produced. On the 11th February, 1863, M. Deguise brought the case he had alluded to before the society, and showed that the failure " depended upon the formation of an osseous callus at the level of the resected portion." At the same meeting M. Bauchet showed a young Syrian girl in whom contraction of the left side had taken place, together with a loss of substance of the cheek, and commissure of the lips, equalling a five franc piece in size. In this case a centimetre and a half of the jaw was removed; and though extensive suppuration and necrosis of the jaw ensued, the girl made a good recovery, and at that date (4th February) a very satisfactory amount of movement and power of mastication had been obtained.

On the 29th July, 1863, M. Verneuil communicated to the Société de Chirurgie the histories of several cases operated upon by M. Rizzoli himself, the results of which were most satisfactory. In the first the operation (simple division of the jaw from within the mouth) was performed in 1857, and after six years the boy was

able to eat solid food most satisfactorily; the second case, operated upon in the same year, was equally good. In the third case operated upon in 1858, the mouth could not be widely opened, and the child had some difficulty in speaking. The fourth case, operated upon in 1860, was most satisfactory. M. Verneuil also mentioned a fatal case which occurred in M. Rizzoli's practice, and alluded to my paper in the *Dublin Quarterly Journal* of May, 1863.

It would appear that M. Rizzoli has adopted the plan of inserting a foreign body, such as a piece of gutta percha, between the cut surfaces of bone, with the view of preventing their re-union, and the possibility of doing this was roundly denied by one of the speakers at the Société de Chirurgie. There appears to me, however, to be no difficulty in effecting this, provided the section be made from within the mouth and without external incision, as proposed by M. Rizzoli, but I cannot speak with certainty, having no experience of his operation.

One observation of M. Verneuil's is, I think, worthy of special notice, viz., that all Rizzoli's successful cases have been examples of contraction within the mouth without loss of substance of the cheek, whereas the unsuccessful cases of the operation which have occurred in Paris had suffered considerable damage in the soft tissues; and he suggests that in these cases Esmarch's operation may be more properly applicable. In the case I am about to relate the loss of substance in the cheek had been replaced by a dense cicatrix, which it would have been unwise to interfere with from within the mouth, and at the same time, owing to its firm contraction, it would have been impossible to have performed Rizzoli's operation in the way he recommends, viz., without any external incision. I therefore resorted to Esmarch's proceeding, with the results of which I have every reason to be satisfied.

CASE.—Ellen Johnson, aged twenty-three, was admitted into the Westminster Hospital on the 22nd January, 1864, with closure of the jaws from cicatrices.

History.—When six years' old she had fever, and her mouth was ulcerated, as the patient believes, from the effects of mercury, which her mother told her was rubbed into the soles of her feet. As long as the patient can remember the jaws have been tightly closed; and some years ago Dr. Budd, of Plymouth, removed a small piece of dead bone. Three months before admission she had typhus fever,

and whilst ill the left commissure of the lips gave way, causing her present unsightly appearance.

Fig. 1.

On admission, the lower jaw is firmly held against the upper by dense cicatrix tissue on the left side, which appears to involve the whole of the buccinator muscle, and to extend to the angle of the mouth, a firm depressed cicatrix occupying the whole of that portion of the cheek. The teeth of the upper jaw on the left side project considerably over the lower teeth; the first molar was extracted by Mr. Bullen, at the Lambeth Infirmary, a short time since, but the bicuspids and canine teeth remain fully exposed to view, the second bicuspid being thrown forward out of its proper position, and being decayed. The commissure of the lips has been divided by the pressure of the teeth, and the extremities of the lips are now half an inch apart. The girl introduces soft food between the teeth on the right side, which is perfectly healthy, and has a very slight power of triturating the food on that side. She obtains sufficient nourishment, though slowly, and has gained flesh since her convalescence from fever.

In this very unfavourable state of things I determined to perform Esmarch's operation for the formation of a new joint in front of the cicatrix, believing that it would be impossible to obtain any good result by interfering with the cicatrix itself either from within the mouth or by transplantation of skin.

Operation.—24th January, 1864.—The patient being under the influence of chloroform, I extracted the two bicuspid teeth of the upper

and one of the lower jaw. An incision was then made for two inches along the lower border of the jaw, immediately in front of the cicatrix, and the tissues being cleared from the bone, a narrow saw with a movable back was passed through the wound into the mouth. With this one cut was made immediately in front of the cicatrix, and slanting backwards; and another cut half an inch in front, and slanting forwards, both going through the whole thickness of the bone. The wedge thus cut was then removed by dividing the few fibres of the mylo-hyoid muscle attached to its inner surface. It was found that the healthy right side of the jaw could now be freely moved, and the teeth of the two jaws separated to some extent. A small piece of sponge was inserted between the cut ends of the bone, and the wound was closed with a couple of sutures, no ligatures being applied.

The piece of bone removed included the whole thickness of the lower jaw, and measured seven-eighths of an inch along its lower border. It contained the mental foramen, with a portion of the nerve.

On the 25th January (following day), there was a little unimportant oozing of blood, and the piece of sponge was removed. Patient quite comfortable.

On the third day, the contracted masseter of the right side having yielded, the patient was able to move the jaw freely. The wound was dressed with water dressing.

By the 10th February she was ordered soft biscuit to masticate and so exercise the jaw.

On the 23rd February (a month after operation) the wound was nearly healed, and the patient had so much power of mastication that she was ordered meat diet.

March 5th.—Two little exfoliations from the cut surfaces of the bone came away by the mouth, the wound being quite closed and the movements of the new joint free.

It may be mentioned here that it was easy to watch the gradual formation of a new joint from the interior of the mouth; the cut surfaces of the bone becoming gradually rounded and covered with mucous membrane, continuous with that of the mouth.

On the 23rd March (just two months after the operation), the false joint being in a perfectly satisfactory condition, I determined to attempt to remedy the deformity of the cheek and angle of the mouth.

The patient being under chloroform, the extremities of the lips

was detached from the subjacent bone, and the anterior edge of the cicatrix of the cheek was vivified. A small flap, three-quarters of an inch in length, was then marked out in the healthy portion of the cheek, and was dissected up, being attached by a broad base to the extremity of the upper lip. This being drawn down with the end of the lip, fitted well into the gap, and also brought the lips close together at the angle of the mouth. The flap was secured with several wire sutures, and the gap made by the removal of the flap was closed with two hare-lip pins and twisted suture.

The results of this operation were unsatisfactory; the lips failed to unite, and the flap separated from its attachments; after the wounds had healed, however, the upper lip was found to be lower than before, thus offering every probability of a good result in any future operation.

The patient was sent to Walton for a month, and returned on May 30th, with her general health much improved.

On the 3rd June I made another attempt to close the aperture in the cheek, under chloroform. The edges of the opening were vivified, and the mucous membrane was removed from both the lips for half an inch from the angle of the mouth. The lips were freed from their attachments to the bones, and they were brought together with a hare-lip pin with the view of forming a new com-

Fig. 2.

missure in front of the position of the old one. Another pin was introduced at the posterior part of the wound, to keep the parts in

position; collodion was painted over all. Straps of plaster were applied to relieve the tension upon the pins.

8th June.—The pins were withdrawn, having nearly cut their way out. The wound gapes posteriorly; but the lips appear to have united in great part. Straps re-applied.

17th June.— The new commissure of the lips is quite perfect, and the rest of the wound has contracted considerably, and is granulating healthily. I introduced another hare-lip pin to bring the granulating surfaces together, and increase, if possible, the breadth of the commissure.

28th July.—The patient was discharged—her condition, at this time, with the mouth wide open, being shown in Fig. 2—her personal appearance having much improved owing to the growth of her hair. The commissure of the lip is half-an-inch in breadth; and, with a piece of black plaster over the opening, which is now much reduced in size, the patient is very comfortable, although the saliva flows from time to time through the opening, when the plaster becomes loosened. The space between the incisor teeth, when the mouth is widely opened, is exactly half-an-inch; and the movements of the jaw are very free.

I have recently (March, 1865), received an account of this patient from my friend, Mr. W. P. Swain, of Devonport, who finds that the mouth can be opened as much as ever, and that the power of mastication has increased rather than diminished.

I take this opportunity of recording the present condition of the cases reported in my former paper.

Barton, B., the boy on whom I operated in July, 1862, continues in perfect health, and able to take plenty of nourishment, although the movements of the jaw have very decidedly diminished owing, apparently, to contraction of the fibrous tissues around the new joint, due, as the patient and his mother believe, in the first instance, to the cold of the severe Winter following the operation, from which he suffered considerably.

I have lately (March, 1865), had the boy up from the country, and find that the space between the left molar teeth has diminished from seven-eighths to one-eighth of an inch, and that between the left lateral incisors, from five-eighths to two-eighths of an inch. The movement is still free enough to show that osseous anchylosis has not taken place in the new joint; but whether the contraction is due simply to changes at that point or to the contraction of some

band it was impossible to determine, as the boy positively refused all interference, either with or without chloroform.

Frances H., the girl treated by Mr. Holt by internal division and the application of metal shields, wore the shields for some months after leaving the hospital, but discontinued them some eighteen months back. The contraction has returned to some extent, the band which existed in the cheek having shortened so as to diminish the extent to which she can separate the teeth one-half, viz., from three-fourths to three-eighths of an inch. The cheek is slightly tucked in owing to the contraction; but the girl is perfectly well and comfortable, and will not allow any interference with the parts.

Isabella M'Nab (my other case treated by metal shields) whose case was remarkable owing to the adhesions being present on both sides of the mouth, was seen by Dr Crockett, of Dundee, in the middle of last Summer, and that gentleman has kindly sent me the following report of her condition:—" The jaws can be opened with ease to the extent of half an inch; she has begun to articulate distinctly within the last two months, and within the last fortnight is able to chew a crust of bread, having some lateral motion of the jaw. A fetid muco-purulent discharge continues to come from the mouth, but her general health is much improved."

ART. XVIII.—*Puerperal Fever, Metastasis to the Bronchial Tubes; Successful Treatment by Small Doses of Turpentine.* By JOHN POPHAM, A.M., M.B., Licentiate King and Queen's College of Physicians.

ABOUT the middle of January, 1865, an outbreak of puerperal fever occurred in the lying-in department of the Cork Union Workhouse, which, at first, threatened serious consequences. There is accommodation in these wards for about fourteen cases; and the beds are kept generally occupied. Taking into account the number of women having primary or secondary syphilis who come into the workhouse for child-birth, it is surprising that grave puerperal ailments are not more frequent; but free ventilation and cleanliness are so strictly enforced that it is a rare occurrence for any

medicine beyond the ordinary simple formulæ to be prescribed. However, at the time above-mentioned, three cases of puerperal fever occurred in as many days, of which the first was fatal, and the two others recovered. Impressed from former experience with the necessity of clearing out the wards thoroughly, as the only reliable mode of arresting the contagion, I transferred the healthy patients to an airy apartment, while the affected cases were changed to the spacious ward used for fever, but then unoccupied by any infectious disease. The bedding was then removed from the midwifery ward, the floors were scoured, the walls and ceilings whitewashed, and fumigation employed. The prudence of these steps was seen in the cessation of the epidemic; so that, after a fortnight's proba-tion, during which time the windows were kept open, both by night and day, I was able to re-occupy the rooms without any subsequent case up to the present time.

The history of the three cases was as follows—the first of them was the fatal one:—

Bridget Keefe, over forty years of age, was confined with her first child, on Friday, January 13th. Her labour was severe, lasting thirty-two hours; the child still-born. On January 20th, the eighth day, she left her ward without permission, in order to be churched. The day was cold, and she was detained more than an hour, but at the time she made no complaint of any incon-venience. During the night, however, she got severe pain of the abdomen and dyspnea, for which the nurse applied turpentine fomentations with much relief. At the visiting hour, on Saturday, my attention was called to the case by the nurse, and on making a close examination, the threatening symptoms of uterine inflamma-tion appeared to have passed away; and the patient expressed herself as quite free from any complaint. The same favourable state continued all the next day. On Monday, the 23rd, however, a most formidable change suddenly ensued. The abdomen became tympanitic, the patient shrinking on being touched; the respiration short and gasping; the lungs greatly oppressed, bronchial râles being audible all over the chest; the pulse had risen to 140, and was feeble and thready. The ghastly hue of death was fast settling on her face. I saw her almost immediately after the sudden collapse, and used stimulants and counter-irritation without any avail. She died asphyxiated sixteen hours afterwards. No *post mortem* examination was made.

The preceding case was an example of puerperal fever after a treacherous calm falling suddenly and heavily upon the pulmonary organs. Up to the morning of the 23rd no indications existed of any mischief occurring in any of the large cavities. The patient, after the first symptoms of pain had been relieved, experienced no return of it for two days. She allowed free pressure with the hand over all parts of the abdomen without wincing; there was no vomiting; both the pulse and the respiration were quiet. On the above morning all this was changed, and rapid typhoid sinking was but too fatally evident in the livid face and bronchial effusion which had set in, defying all medical treatment. Was this suffocative secretion to be regarded as a metastasis to the pulmonary organs from the uterine? We shall defer the consideration of this matter until we have detailed the next case.

This was a young woman named Margaret Leahy, aged eighteen, who occupied the next bed to Keefe, and was taken ill a few hours after her fatal collapse. This woman was also a primipara, and had been confined on January 16th. She progressed favourably until the night of the 23rd, when a rigor occurred, followed by confusion of intellect, lapsing into delirium. On the 24th I found, on examination, peritoneal tenderness; distention of the abdomen; heat of this region rising to *calor mordax;* face anxious; soreness of the throat, with some difficulty of swallowing; breathing hurried, and a pulse of 130. As the type of this case seemed more inflammatory than typhoid, I directed leeches to be applied to the abdomen, and a bolus of calomel, camphor, and henbane, to be given, followed by a draught of castor oil and turpentine—a mode of treatment which I have found often to arrest puerperal inflammations. It did not, however, do so in the present case; and her state on the next day, the 25th, was alarming. She had passed the night in wild delirium without any sleep; the bowels had been fully affected by the medicine, and on the whole, less tenderness and fulness existed; but another set of symptoms of equally dangerous import had supervened. The lungs, as in the preceding example, were dangerously complicated, the respiration was laborious, and suffocation seemed not far distant. The cerebral organs were also affected, as was plain from the creeping stupor, known as *coma vigil,* coming on. Thus, when spoken to in a loud tone, she would open her eyes languidly, but at once would relapse into an unconscious dreamy state. The mouth was partially open,

the lower jaw relaxed, and the power of swallowing by voluntary efforts was beginning to fail.   Signs of gangrene of the genital organs had commenced, and a foul discharge flowed from the vagina ; retention of urine also existed, requiring the catheter.   In consulting with Dr. Gardiner upon this seemingly hopeless case, it occurred to me to try turpentine in small doses, and I directed draughts containing half a drachm, with fifteen minims of chloric ether, to be given in an emulsion every two hours, alternating them with decoction of seneka and carbonate of ammonia.   Blisters were applied to the nape of the neck, and to the sternum ; turpentine to the abdomen ; and the strength was to be supported by beef tea, as much as she could be got to swallow.

January 26th.—Her appearance to day is more hopeful.   The nurse had given her seven draughts of spirits of turpentine and ether ; the stupor had lasted till midnight, and then declined gradually, so that about four o'clock a.m. she had become conscious ; the blisters had risen on the chest and neck.   The turpentine had produced numerous fluid evacuations of a slimy character ; and the size and tenderness of the abdominal walls and uterus had diminished ; urine abundant and not passed involuntarily.   Her senses had returned ; but she could not recall anything since her illness began.   On examining the lungs they were found extensively affected ; in fact, the whole severity of the ailment seemed now concentrated on the chest.   As the turpentine caused nausea from the frequency of its administration, the draughts were lessened to one every six hours.   Barm poultices were applied to the external labia, and antiseptic vaginal injections used.

27th.—The peritoneal and uterine symptoms continue to abate ; the action from the bowels is kept up freely by the turpentine ; nothing remains of the cerebral symptoms except deafness, and her general appearance is much more encouraging.

There is, however, cause for anxiety in the condition of the lungs ; auscultation shows a copious effusion into the finest capillary tubes, and her breathing has risen from twenty-four, which it was in January 25th, to forty per minute.   The pulse is about 126.   To relieve the stuffed state of the bronchial tubes, she was ordered a mustard emetic ; the turpentine draught to be continued.

28th.—She has thrown up a quantity of ropy-mucus, with a diminution of a few beats in the pulse, and somewhat of the frequency of the respiration ; the bowels are still copiously acted upon by the turpentine ; all tenderness and tension of the abdomen

have nearly subsided; a copious purulent discharge from the vagina exists, and the gangrenous tendency in this part has been arrested. The turpentine draughts to be continued twice a day.

30th.—The cough is still paroxysmal; the frequency of the respiration is over thirty; bowels moved several times a day; she complains of hemorrhoids; the vaginal discharge much improved. Ordered to omit the turpentine.

In the subsequent treatment of this case the broncho-pneumonic symptoms continued very obstinate, the tubes showing much infarction, and portions of the lungs indicating by dulness on percussion over them, and localized pain, pneumonic consolidation. Under flying blisters and expectorants the symptoms were resolved, and emetics were always of use in getting rid of the accumulated effusion. It was not until a fortnight from the last date that the inflammation of the pulmonary organs was quite broken up, and the profuse secretion reduced to the normal amount.

The third case was a much lighter one, and is chiefly remarkable as arising, like the last, evidently from contagion. The woman, Catherine Kidney, was confined on January 22nd; the presentation was a breech. She was put into a bed which Keefe had occupied, just before her illness had assumed its fatal signs. On the next day, the 24th, she was seized with rigors, stoppage of the lochia, and soreness with distention of the abdomen; she also had vertigo and headache; noises in the ears; nausea and vomiting, but no pulmonary complication. She was ordered the same bolus and draught as the last case, and with the effect of checking the progress of the ailment; she vomited largely after the draught, and her face became slightly icteric. The action of the heart was feeble, and a great tendency to syncope existed; the pulse not rising above eighty-four. She was ordered a turpentine enema and powders of calomel and opium. On the following day the danger had declined, and in a few days she was convalescent.

Remarks.—There are a few points in the preceding cases which may require observation, the first I shall notice is the *rapidity of the communication of the disease.*

The occurrence of three cases of puerperal fever within as many days in a ward wherein for many months not a case of *post partum* illness appeared, could not fail to attract attention. The first, or fatal one, to all appearance, originated in exposure to cold, in a

person peculiarly predisposed to take disease, from a tedious labour with a first child, and at the mature age of forty; but in the two others there was nothing sufficient to awaken any apprehensions of uterine fever, save, that one was in her first confinement and the other had a preternatural presentation. But these latter events are of everyday occurrence, without the sequela of uterine fever, when the patients are not brought within the operation of contagion. But it becomes different when a disease so malignant in its character as puerperal fever exists in the vicinity. Then the slightest concomitant circumstances are elevated into predisposing causes—exhaustion from slow or painful labour, hemorrhagic losses, mental anxiety, shattered health—all these impart an increased aptitude to take on inflammation when an exciting cause is applied. The uterus requires rest; it has just passed through a severe ordeal, it is to be regarded as an injured or wounded organ on the brink of disease, in which a rapid disintegration of matter is going on to restore it to its pristine state of dormancy. In such a state, as Dr. Carpenter has observed, there exists in the body an azotized matter tending to decomposition. This putrescent matter when in excess, and when its elimination from the body is prevented, becomes a septic poison, not only contaminating the blood in the persons in whom it exists, but capable of communicating itself to others susceptible of its influence. There is a limitation to this susceptibility; the uterus and its appendages must have been prepared for it by a certain state. Not only are non-parturient females unsusceptible of it, but parturient cases also after the lapse of two or three weeks from the period of labour, when the decaying organic matters, floating in the system, have nearly all of them been expelled. I regard the first of the above cases as one of metro-peritonitis, of which the exciting cause was cold, and that a sporadic cause like this is just as capable of becoming a source of contagion as an epidemic one, which may originate in some unknown and unhealthy state of the atmosphere. In the former instance proximity is required to develop the disease in others; in the latter, it may not need the presence of other cases. It is observable, that the two women who were attacked shortly after the first patient, were both within a few feet of her, while the women at the opposite side of the ward escaped, the poison being prevented from becoming concentrated by diffusion through fresh air. The rapidity of the seizure shows that the period of incubation in the system is not so long as in most zymotic diseaes.

2nd. *Broncho-Pneumonic complication or Metastasis.*—The second

point of interest was the occurrence of broncho-pneumonia in two of the cases, and that in an extreme and sudden form. In both of them it came on quite unexpectedly, far surpassing in gravity the uterine symptoms, though the latter organ was the *point de depart* of the disease, and terminated life in one case, while it endangered it in the other. It is worthy of inquiry in what light we are to regard the pulmonary lesion. Is it as a merely accidental circumstance? This scarcely seems probable, as it occurred almost coincidently in two cases, neither of which had any pre-existing bronchitic tendency. The chances of two persons being suddenly attacked with the same disease at the same time are remote though certainly possible occurrences. I am aware that in puerperal fever the respiration is affected at an early period, without the lungs being necessarily engaged, and that this is explained by the increased duty thrown upon the intercostal muscles by reason of the forced inaction of the diaphragm from the pain which its contractions would cause to the inflamed peritoneum, but this is totally different from the present cases. In these we can scarcely avoid considering the pulmonary affection as a stage of the disease, just as in typhus fever or variola. In most of the fatal cases the morbid appearances indicate generally copious effusions into the areolar tissue of the lungs and the bronchial tubes, and also into the cavity of the pleura, and the latter accompanied with deposits of fibrin. What is the cause of these pulmonary complications? Do they arise from a septic poison, from the uterine sinuses, floating in the blood and causing irritation in the organs it pervades? Or are we to accept the mechanical theory of metastasis advocated by Virchow, that thrombi form in the uterine veins, which, becoming detached and carried along in the current of the circulation, are by their arrest in the lungs sufficient to create inflammation in these organs. In corroboration of his opinion Virchow observes—that in a recent epidemic of puerperal fever at Vienna it was found that " however manifold the forms the disease assumed, yet all those cases which were accompanied by metastasis in the lungs were also attended with thrombosis in the regions of the pelvis or in the lower extremities, whilst in the inflammations of the lymphatic vessels the pulmonary metastases were wanting."[a] The interesting analogy thus opened to us by Virchow deserves to be followed up by other observers.

[a] Virchow, Cellular Pathology, translated by Dr. Chance, page 206.

3rd. *Treatment by Small Doses of Turpentine.*—I had frequent opportunities while a student of the Coombe Lying-in Hospital, under the mastership of Mr. Hugh Carmichael, of witnessing his treatment of iritis by small doses of turpentine, and I formed a favourable opinion of this medicine from several successful cases of its use when mercury failed or could not be used. It has been lately shown by Dr. Magnus Huss, in his valuable work on fever, that a similar employment of it is very useful in the bronchitis and pneumonia of typhus. In the capillary bronchitis of fever, he observes:—" I never saw any remedy more powerful in preventing this affection from assuming a dangerous character, either by transition into pneumonia or by stopping up the finer tubes in a greater or less degree;" and the opinion thus put forward has received the corroborative testimony of Murchison and other competent judges. The formula which Huss recommends is an emulsion with honey, if there be no diarrhea, or gum mucilage should diarrhea be present. ℞—Ætherolei terebinth. depur. ʒss. vitelli ovi unius, aquæ destill. mellis a a ʒii m. fiat emulsio: dose, a teaspoonful every other hour; the quantity of turpentine in each dose is nine drops. The effect is to loosen the tenacity of the bronchial mucus, to lessen the irritation of the cough, lower the heat of the skin and the frequency of the pulse, and increase the secretion from the kidneys. In the pneumonia of typhus his experience of it is equally encouraging, but it is more successful in idiopathic than in hypostatic pneumonia. The transition from this to the broncho-pneumonia of puerperal fever is easy. In the preceding case, where it was used in larger doses, it certainly acted rapidly and happily on the uterine and abdominal symptoms, and more slowly, but still safely, upon the pectoral. But this may be expected in so extensive a bronchitis as the above, wherein the blood was fast becoming loaded with carbonic acid and beginning to act fatally on the brain. This menaced danger was in a little more than twelve hours removed by the turpentine, aided by other means. We had then to deal with the enormous effusion suddenly poured out by the tubes, loosened from the first or non-secretive stage, to the expulsion of which the emetics greatly contributed. It must not be forgotten that Huss gives a necessary caution, namely, to stop its use when the catarrh is resolved, as it has a tendency when long continued to irritate the mucous membrane of the stomach and bowels.

Case of M.W.

Fig. 1

Case of J. H

Fig II

Fig. III

Fig IV

Fig V

Case of E. B

Fig VI

Fig VII

Fig VIII

Art. XIX.—*The Utility of the Endoscope as an Aid in the Diagnosis and Treatment of Disease.* By Francis Richard Cruise, M.D., T.C.D.; F.K. and Q.C.P.I.; M.R.C.S., &c.; one of the Medical Officers of the Mater Misericordiæ Hospital; and Lecturer on Medicine in the Carmichael School, Dublin.

I believe it will scarcely be denied that one of the most important characteristics and improvements of modern medicine consists in the *direct exploration of organs* for the elucidation of their physiology and pathology.

This tendency to rest our knowledge upon physical rather than rational signs is by no means of recent date, although latterly, especially within the last half century, it has become more obvious and better appreciated.

Glancing back over the history of the profession during that period, we notice how percussion, methodized by Avenbrugger, and popularized by Corvisart, seems but to have paved the way for Laennec's discovery of the immeasurable practical value of auscultation in diseases of the chest. Subsequently other portions of the body, lending themselves to exploration even more freely than the thoracic organs, have come in due course to be objects of interest and research with special observers, who from time to time have devised means and implements for their more satisfactory examination and study.

Without delaying upon this point, I may quote, in illustration, the revival by Recamier of the long-forgotten speculum uteri; also the speculum auris, originated, I believe, by Newburg; the ophthalmoscope of Helmholtz; the laryngoscope of Czermack; and, though last certainly not least, the endoscope of Desormeaux.

Upon a recent occasion (March 15th) I had the honour of exhibiting to the Medical Society of the King and Queen's College of Physicians a modification of the endoscope which I have used for some time past, and of reading a short paper, explaining its construction and use in the study and treatment of disease.

Being the first in Ireland, so far as I can discover, to exhibit or use such an instrument, I felt much diffidence as to the views which others might entertain respecting it, although I had fully satisfied myself of its real utility and probable general adoption when understood. However, the very flattering reception which the instrument and communication met with, the notice it received

in the London medical journals,[a] and the interest which it appeared to excite, have induced me to embody in the present brief sketch my experiences of it.

Agreeably to the old adage that " Naught is new under the sun," as each addition to our means of diagnosis has been brought under the notice of the profession, claimants have sprung up to dispute the honour and credit of invention. Doubtless it would be very unprofitable at the present time to discuss at length the precise merits of the competitors in each case; therefore I shall pass by that question, merely observing, in order to justify the quotation of the above-mentioned names, that I have endeavoured to associate with each method and instrument the name of that individual who has done most to demonstrate and extend its practical utility.

With respect to the endoscope in particular, I may observe that M. Desormeaux, in the introductory chapter of his recent valuable memoir, candidly acknowledges that the idea of an instrument capable of throwing light into deep cavities, such as the bladder and urinary passages, was not original with him. He accords to M. Segalas the merit of originating the thought, and alludes to his unsuccessful attempt, as well as to the fruitless labours in the same direction of the late Mr. Avery of London, and Dr. Hacken of Riga.

Considering the ability and industry with which M. Desormeaux has prosecuted the subject, it is a matter of surprise to me that important labours of others have escaped his cognizance. At any rate it is quite certain that M. Segalas was not the originator of endoscopy. Barrini of Frankfort invented his " light conductor" about the year 1806; and in 1824 (two years before Segalas' proposal) the celebrated Dr. J. D. Fisher of Boston devised and actually used an instrument identical in principle and similar in construction with that at present recommended by Desormeaux. An ingenious auriscope, which has been in use for many years past, resembles it also. Bombalgini, too, subsequent to Segalas, paid great attention to endoscopy. I would refer those interested in this matter to an article in the fourteenth volume of Chapman's *Philadelphia Journal of Medical and Physical Science,* for 1827, which was pointed out to me by my friend, Dr. E. S. O'Grady, Lecturer on Surgical Anatomy in the Carmichael School of Medicine, Dublin.

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[a] See Lancet, Medical Times and Gazette, and British Medical Journal for March, 25th, '65.

Despite the occasional attention paid to the subject during the last half century, for the most part no practical result appears to have followed, and the fate of the endoscope has heretofore been general neglect and oblivion.   So far as I can discover, M. Desormeaux alone has been an exception.   He has most indefatigably worked at endoscopy; and to him, undoubtedly, is due the credit of patiently toiling for more than thirteen years, until at last he has accumulated a mass of facts so important and interesting that it is impossible for the profession any longer to ignore his labours and the value of this method of investigating and treating disease.   It would be difficult for me adequately to laud his recent beautiful memoir,[a] which may be taken as the model of a scientific essay—full of learning, research, and modesty, and bearing on every page the impress of genuine truthfulness.

Apropos to the slight shown towards the endoscope, a long and amusing history might be written of the opposition which has greeted every improvement in the science and art of medicine from its earliest date; such a history would, I conceive, be out of place here.   Frivolous objections avail nothing at the time they are advanced, and only afford material for merriment and ridicule in the future.   The practical commentary upon all such opposition lies in the contrast between medicine as we now see it, and medicine as our fathers knew it little better than half-a-century ago.

I shall not dwell upon the history of my own efforts at endoscopy— suffice it to say that it has been a dream with me since I became a student of medicine, and a pursuit after which I have continually hankered.   Years ago I tried to work with an apparatus similar to M. Desormeaux's, but, finding the light insufficient, gave it up in despair, and only of late resumed the study.   Comparatively recently a modification of the illuminating portion of the instrument occurred to me; I forthwith carried it out, and thereby obtained as much light as I required for all practical purposes.   Since then I have used the endoscope constantly, and have neglected no opportunity of extending my knowledge of it.   Rendered distrustful of success by repeated failures, for months I worked in silence and in private, until I became familiar with its use and manipulation.   Then, for the first time, I exhibited it to others.   Early in March I showed it to Dr. Fleming, of the Richmond Hospital, and demonstrated to

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[a] De l'Endoscope et de ses Applications au Diagnostic et au Traitement des Affections de l'Urèthre et de la Vessie.   Par A. J. Desormeaux.   Paris: J. B. Baillière et Fils.

him and Professor R. W. Smith an organic stricture of the urethra. Subsequently, by the kind invitation of medical friends, I examined a variety of cases at many of the Dublin hospitals, and also in private. It is my pleasing duty to acknowledge gratefully the kindness and liberality with which my *confrères* have placed their cases at my disposal, and have thus multiplied the field of my experiences in endoscopy. For myself I must say I am quite satisfied that it is an unquestionable success, and I feel justified in stating that I believe the field of its practical utility is almost illimitable. I venture even to hope that in the course of time it may work as complete a revolution in our knowledge of many obscure diseases as the stethoscope has wrought in the diagnosis of affections of the lungs and heart.

The endoscope, at its birth, met with but little favour, and for many years was absolutely slighted and passed by. M. Desormeaux tells us how one of his teachers, unable to deny the reality of the instrument merely asked him a question—" What use is it?" The answer to that query conveys its whole worth, namely—" It enables us to see parts which, without its aid, are wholly beyond the reach of vision."

Were it needful to illustrate the usefulness of our senses in the diagnosis of disease, I might aptly quote here the apologue of a witty physician of the olden time, alluded to by D'Alembert. He describes Nature and Disease engaged in mortal combat; a blind man armed with a club—the Physician—comes in to settle the difference. At first he tries to make peace; failing in this he lays about him at random. If he hits Disease he slays it; if he hits Nature he kills the patient. Now, I would ask whether the Genius of modern medicine, which in so many instances has stricken the scales from off the eyes of the physician, and bestowed upon him the mighty gift of vision, has not wrought the miracle of making the blind to see, by enabling him to strike to the point, and no longer at random?

Let us for a moment contrast the predicament of the physician called upon to treat a malady which it is possible for him to see, and one hidden from his view. For example, let us take a case of diseased eye, and one of diseased urethra. He will not content himself by calling the former an *ophthalmia* without ascertaining what structure is engaged, and wherefore. He will examine the lids, the conjunctiva, the cornea, sclerotic, anterior chamber, lens, and, if need be, will take his ophthalmoscope and investigate the

vitreous humour and retina. It is needless to say how much information he may obtain from this simple inspection, both as to the seat of the disease and as to its nature—whether traumatic, catarrhal, arthritic, syphilitic, scrofulous, or other. His correct diagnosis lays the foundation for a truthful prognosis and rational treatment. What, in contrast, is his position with respect to an ordinary case of gleet? In many, perhaps in most, instances, he can only guess out by uncertain symptoms and unreliable antecedent history, whether the discharge arises from simple catarrh, from chronic inflammation, from relaxed mucous membrane, from syphilitic ulceration, from herpetic excoriations, from a granular condition of a segment of the canal, from disease of the prostate, and so on. In his uncertainty his treatment must of necessity be empirical and his prognosis unreliable, because he can neither tell the nature of the disease, whether it be communicable or not, nor can he foresee whether it will be harmless in its results or likely to lay the foundation of organic constriction. However, the endoscope alters the case materially, and for the better. By its aid the urethra can be seen and minutely examined from its orifice to the neck of the bladder, each single spec of disease ocularly demonstrated, and, if need be, subjected to precise local treatment.

The utility of the endoscope is not, however, confined to the diagnosis and treatment of diseases of the urethra—far otherwise— There is no portion of the human body into which a straight tube can be introduced in which it will not be found of service. With it the interior of the bladder may be thoroughly investigated; tumours, ulcerations, and sacculi recognized; calculi examined, and information gained as to their size, figure, number, position, whether encysted or loose, and so on. The rectum, beyond the reach of the finger and speculum, can be searched for ulcerations, constrictions, tumours, &c. The cavity of the uterus can be demonstrated; so also the auditory meatus, nasal fossæ, pharynx, larynx, and I should even hope, the œsophagus and stomach. Likewise wounds, especially those suspected to contain foreign bodies, abscesses, the cavity of ovarian cysts after tapping, and so on. I have been enabled by the endoscope to obtain so clear a view of the interior of the uterus that I am satisfied it will prove most useful for the diagnosis of small polypi, granular and follicular ulcerations, and other affections, which at present are subjects of conjecture rather than positive knowledge.

Before proceeding further it may be well to explain the con-

struction of the instrument.   In order to render the description as
intelligible as possible, I have introduced some explanatory wood-
cuts, which were executed for me by Messrs. Browne and Nolan of
Nassau-street.

Fig. 1 will assist in rendering the theory of the endoscope
intelligible.

In the first place, there is a tube or speculum, which is
introduced into the cavity to be examined; and at one
extremity of this a mirror of polished silver, perforated
in the centre, is placed at an angle of 45°.   The function
of the mirror is to reflect the light, which is placed later-
ally, into the tube, so as to illuminate it to the end.   As
the calibre of the tube is very small, a most brilliant
light is required, and, in order to obtain the best effects,
it should be made to converge slightly upon the mirror.
This convergence is attained by interposing between the
light and mirror a plano-convex lens of suitable focal
length.

The light being sufficient, the lens properly adjusted,
the mirror bright and correctly placed with respect to
the tube, it becomes a matter of facility for the eye of the
observer, looking through the perforation in the mirror,
to see clearly to the bottom of the speculum.

Such is the endoscope I have adopted, in principle
identical with that used in 1824 by Fisher of Boston.

To obtain a suitable light is *the grand difficulty* in
the construction of the instrument, and it has cost me
no inconsiderable labour to overcome this obstacle.   Even
at the end of my prolonged experiments I am compelled
to acknowledge that the discovery of the illuminating
power I have selected was to a great extent fortuitous.

Experiments which I need not recall
here, but which are familiar to those
who have made investigations with
polarized light, led me to the knowledge
that one of the brightest illuminations
which can be obtained by any means is that given off by the *thin
edge of the flat flame* of a petroleum lamp.   Moreover, the steadiness
and intensity of the light are increased to the utmost by using a tall
draught chimney, and by dissolving camphor in the petroleum, in
the proportion of ten grains to each fluid ounce.   I may further

Fig. 1.
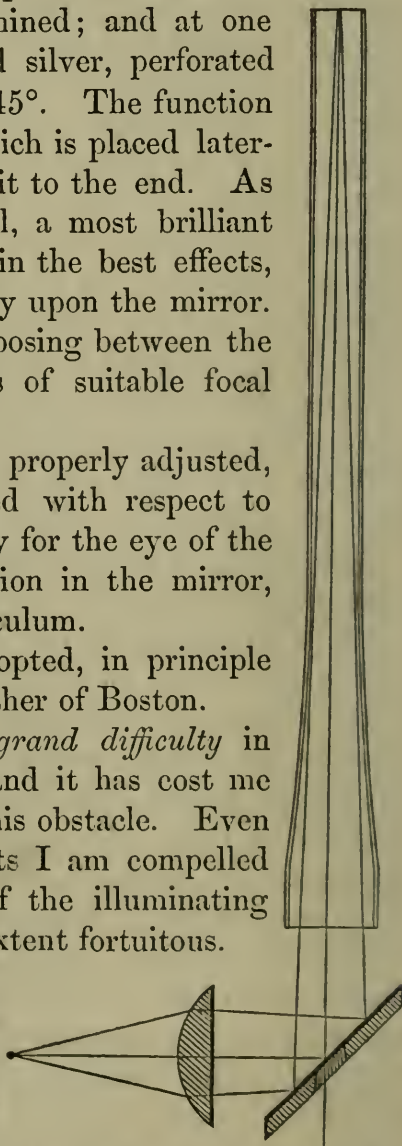
observe, that this light possesses the advantages of cheapness, freedom from danger, and total independence of such care in operation as to demand the aid of an assistant specially devoted to it. Similar attractions do not exist for the magnesium wire, oxycalcium or Drummond lights, or for that produced by electricity, which latter was proposed forty years ago for Fisher's apparatus by Professor Patterson.

Such then is the light I use and recommend, and I believe it will be found applicable to many other instruments. It is open, undoubtedly, to two objections. First, that it produces considerable heat; and secondly, the pencil of rays being extremely narrow, a very perfect adjusting apparatus is required to facilitate the movements of the lens and inclined mirror, so as to take advantage of it under all circumstances. I shall presently explain the means by which these disadvantages are obviated, and perfect facility attained in the use of my endoscope.

Fig. 2 shows it in sectional view. It consists of a lantern, in the interior of which the lamp is suspended by means of a diaphragm, which slides in grooves and holds it perfectly steady. The lamp is so placed when in the lantern that the *edge* of the flame is opposite the aperture of the tube, *a*. This tube rotates freely in the socket which receives it, and carries the condensing lens. It is attached at right angles to another tube, *b*, which, in the woodcut, for clearness sake is represented in the vertical position. This latter tube holds the perforated mirror, and terminates at one end in a joint, which, by means of a thumb-screw, can be fitted to the various exploring specula, while at the other extremity is placed an eye-piece through which the observer looks. Although represented in Fig. 2 in the vertical position in order to show a section of its interior, in use it is kept as nearly as possible horizontal, as delineated in Fig. 3. In order to protect the observer's eye from glare, as much as possible, a conical diaphragm with a very minute aperture is placed directly behind the perforated mirror, and the interior of the apparatus and specula is carefully blackened. To suit myopic and presbyopic
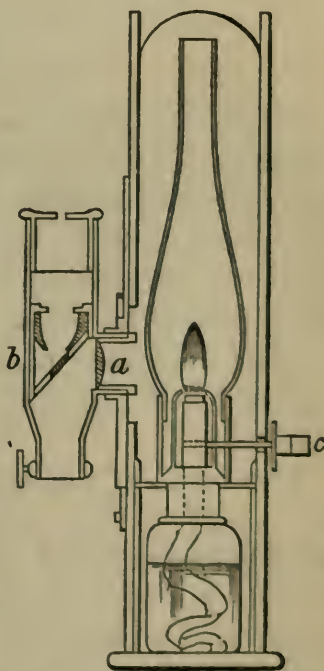
Fig. 2.

eyes, adjusting glasses are provided, and, when required, take the place of the eye-piece.

Fig. 3.
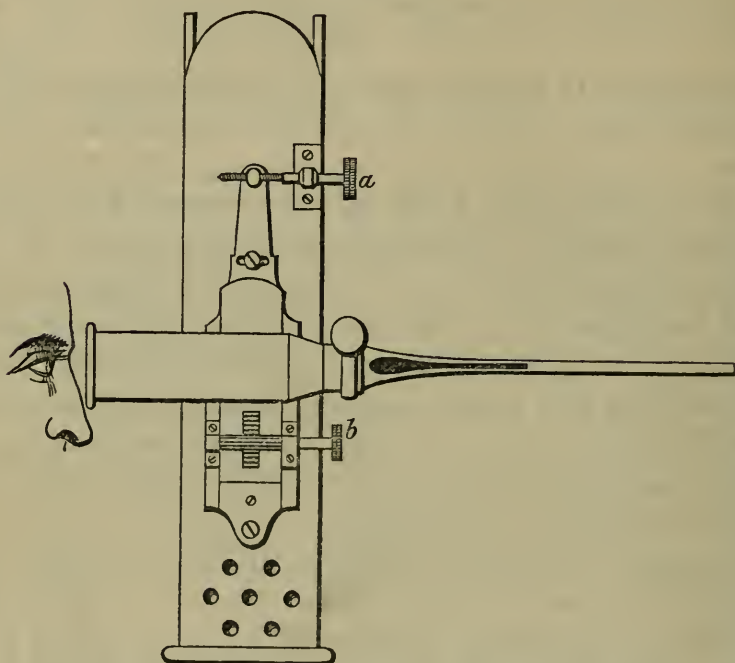
To prevent inconvenience from the great heat evolved by this powerful light, the lantern is made of mahogany, and consequently never becomes so warm as to inconvenience the hand; were it of metal it would soon be impossible even to touch it. This end is further carried out by having the top open, and air-holes perforated in the lower part of its sides (*vide* Fig. 3) and in the diaphragm. These produce a constant draught of cold air through the apparatus. This current has the additional good effect of steadying and intensifying the flame.

The mode of adjustment of the condensing lens and mirror to the pencil of light given off by the edge of the flame is the next point to be explained. The tube, a, (Fig. 2), is received into a socket, wherein it freely rotates; this socket is mounted on a doubly shifting stage, the mechanism of which will be best understood by reference to Fig. 3. It admits, as may easily be seen, of two motions, right and left, governed by the tangent screw, a; up and down, regulated by the rack and pinion, b. By this contrivance the lens can be easily shifted about as required. The height of the flame itself is regulated by the button, c, (Fig. 2), and requires special attention. It must be so arranged that no smoking takes place, as the least imperfection in combustion at once causes deterioration in the quality of the

light. As I mentioned before the light evolved in the way described is amazingly intense, so much so that if the observer looks *directly* at it, even for a few seconds, his eye will be dazzled and rendered unfit for making an endoscopic examination for some time after. Hence it is advisable to acquire the habit of adjusting the instrument for use with a test object, or with the interposition of smoked glasses. Habit has rendered it easy for me to adjust with a test object. I ordinarily use for the purpose a plate such as the chromo-lithograph accompanying the present communication; I pin this against the wall, and, having lighted the lamp and duly regulated the flame, I hold with the left hand the endoscope in the position represented in Fig. 3, and place the end of the speculum over one of the coloured figures. Then, looking through the aperture of the eye-piece, with the right hand I move the lower milled head, *b*, until I get the brightest light, and then rotate the upper screw, *a*, until the definition becomes perfect. By slight changes effected in this manner I can regulate the light so as to obtain the clearest possible view of whatever I am examining. All this, moreover, can be done in fewer seconds than it takes to describe the process. To obtain the best effect from the light a few precautions are requisite. The room in which the examination is made, so far as may be convenient, should be darkened; the lantern must be held steadily vertical, whatsoever the position of the exploring tube may be, and the whole interior of the lantern and specula must be kept carefully blackened. I find that the best varnish for this purpose is made by adding a few drops of spirits of turpentine to some lampblack, procured by holding a piece of metal plate over a candle. Thus made, the varnish may be laid on with a camel hair brush; it dries rapidly, leaving a dull black surface which reflects little or no light.

All who are familiar with the endoscope used by Desormeaux will notice the points in which mine differs from his, and the advantages peculiar to mine. For my own part, after full trial, I am quite satisfied that the illumination in Desormeaux's instrument is insufficient for a minute distinction of colours. Possibly his great experience may make up for this defect. On the other hand, I believe I may venture to assert that with my endoscope, any one, however inexperienced, can at once see whatever lies at the bottom of the exploring specula with as much clearness as though it were on the surface of the body. Desormeaux's light is that of a small round gazogene flame, without even a draught chimney. The

illumination it produces is lurid, unsteady, and, despite the reflecting condenser, quite deficient. I think it no more comparable to that which I have described than twilight to daylight. In my instrument I have dispensed with the reflector, because it is not needed, and, moreover, the glass chimney would intercept and scatter the rays proceeding therefrom.

Besides a good illuminating power we require for the endoscope a variety of specula, adapted to the exploration of different regions of the body.

For general use the urethral tube, represented in Fig. 4, can hardly be excelled. It consists of a narrow por-

Fig. 4.

tion, the size of a large catheter, which is just six inches in length; the remainder gradually dilates to form the part which fits into the receiving socket, wherein it is secured by means of a thumb-screw.

A wire stilette surmounted by a plug is provided, which can be inserted into the tube in order to facilitate its introduction into narrow canals such as the urethra. At one side there is an opening, wide above and narrow below, intended to admit probes, carrying either cotton wadding or sponge to wipe the parts under examination, or caustic or other applications for the purposes of treatment. I find the form designated in the tube represented in the woodcut to be most convenient. Desormeaux prefers an orifice such as is represented alongside of it at *a*; but, in practice finding the angular shoulder inconvenient, I have had it rounded off in mine. I find it useful, moreover, to have the tube graduated in inches, in order to show at once the exact depth to which it has penetrated.

Three or four sizes of these urethral tubes are required. They answer remarkably well for other situations, such as the uterine cavity, nasal fossæ, &c. By the aid of one I was lately enabled to ascertain, in a patient of my own, the precise attachment of a huge nasal polypus. In another case of obstructed nostrils, which Dr. Stokes requested me to examine, I was able with such a tube to exhibit a quantity of small gelatinous polypi,

situated high up and far back out of sight, which produced all the annoyance.

For the exploration of the rectum a tube eight or nine inches long and more than half-an-inch in diameter may be provided. With such an instrument Mr. Connolly was able to make a drawing (case of M. W., Fig. I. chromo-lithograph) of a stricture of the rectum in a patient now under my care. For the examination of the external meatus of the ear and membrana tympani, and for the performance of operations thereon, I have had an auriscope Fig. 5. made, which is represented by Fig. 5. Already I have found it most usefnl. Although not comparable to a direct ray ot sunlight, yet, in its absence it makes a reasonably good substitute, and the oblong lateral aperture allows of the introduction of suitable instruments, which can be manipulated under the eye of the examiner. During the early part of the past winter I was baffled from day to day by the darkness of the weather in my efforts to obtain a view of the membrana tympani in a lady whom I attended for a sudden attack of deafness. At last I used a rude ear speculum, fashioned at the time to suit my endoscope, and at once obtained a satisfactory view of the parts. Since then I have frequently used my auriscope with the most satisfactory results.

So far as my experience goes to carry out that of Desormeaux, the most useful field for the operation of the endoscope is the urethra. By its aid diseases of this part, otherwise merely subjects of conjecture and empiricism, are rendered as clear as to diagnosis and as satisfactory respecting treatment, as affections of the eye, or of any other external portion of the body patent to view. Before entering upon the study of the diseases of the urethra, I may premise a few words about the operation of examining it endoscopically.

If the urethra is free from constriction, which can easily be ascertained with a bougie, the best course is to examine it from the neck of the bladder to the glans penis. To do so we should place the patient in a suitable position. In default of a proper couch specially made for the purpose, I place him reclining in an easy arm-chair, with the buttocks near the edge of the seat, and with the thighs well separated. Kneeling between the latter I introduce the tube with plug well oiled, until, by its direction, I know that it has passed the triangular ligament of the perineum. I then introduce the index finger of the left hand (previously well greased) into the

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rectum, and guide the passage of the tube through the membranous portion of the urethra into the prostatic region. So soon as it has traversed the latter, I withdraw the finger from the rectum, extract the plug from the tube, and attach the endoscope, which should previously be lighted and adjusted. Now, holding the endoscope in the left hand, I proceed gradually to withdraw it at the same time that I keep my eye closely applied to the eye-piece of the instrument.

As the tube passes each portion of the canal, the lining membrane comes into full view bit by bit. If a difficulty occur in seeing any portion it will generally be found to arise from oil, blood, mucus, or some other fluid, obscuring the surface. This difficulty is easily remedied.

Before proceeding to the examination a number of rods, with screw ends, such as represented in Fig 6, should be prepared by winding the extremities with cotton wadding, and some should be provided with portions of fine moist sponge securely tied on.

Fig. 6.

When any obscurity of vision arises, one of the rods should be taken in the right hand, introduced into the central slit in the tube, and passed down to its extremity; a little pressure and a rotation or two suffice usually to take up the fluid, and the rod may then be withdrawn. Sometimes it will happen that the wadding or sponge is left behind, and to meet this emergency a little blunt hook, such as represented alongside of the rods in Fig 6, should be at hand; this may be passed down to the sponge or wadding and rotated once or twice; though blunt it immediately becomes engaged therein, and by its aid the substance can be withdrawn. I prefer this hook to Desormeaux's miniature cork screw, as being much safer and less liable to do mischief. During an endoscopic examination this wiping of the part may frequently need repetition. The screw end on the rods facilitates the removal of the cotton when soiled. It is hardly necessary to observe that the strictest care is required in the cleansing of the endoscope and its appurtenances, lest it ever might become a medium for the transmission of infection from case to case.
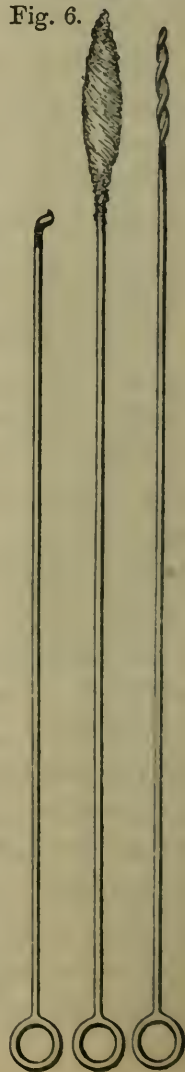
In the introduction of the endoscope catheter it is necessary to be careful not to enter the bladder lest a rush of urine fill it up and embarrass the examination. This is no needless precaution, for habit will teach that a straight instrument enters the bladder with almost as much facility as a curved one. In order thoroughly to investigate the canal it is well, while withdrawing the endoscope, occasionally, to reintroduce it a line or two, and to increase or diminish the light; thus views are obtained which may clear up points otherwise somewhat obscure.

I may also observe that the index finger of the right hand, well oiled, may, from time to time, be slipped into the rectum during the examination of the deeper portions of the urethra, as by its aid we are able to ascertain the position of the extremity of the tube, and to identify the portion which may be diseased. Thus I have frequently been able to ascertain, with positive certainty, morbid conditions of the prostatic, membranous, and bulbar sections of the canal. In cases of stricture or disease anterior to the bulb it is not requisite to place the patient reclining on a couch—he may simply stand with his back against the wall, and the operator kneeling in front of him. I should here mention that the optical portion of my endoscope has been made for me by Messrs. Spencer of Aungier-street, Dublin, while the specula and other fittings were made partly by Charrière of Paris, and partly by Messrs. Thompson and O'Neill of this city. Messrs. Fannin have given me to understand that they intend to supply the instrument perfect in all details.

Before attempting to form opinions respecting morbid conditions of the urethra, our first task must be to learn its appearance in the natural state. Hence we should take as many opportunities as present themselves of studying its aspect apart from all changes resulting from disease. A little experience shows how imperfect an idea of the colour and appearance of the mucous membrane of the urethra during life, can be obtained by its inspection after death. In place of the various hues of yellowish-white, red, and violet, which mechanical anemia or congestion give to the part in the dead-room, we find it in health, in the living subject, throughout of a pale rose tint, its surface smooth and polished, and glistening with its coating of mucus. One portion is usually of much deeper colour than the remainder, namely, the region of the glans. This, I imagine, is due to the extraordinary vascularity of that part.

In an endoscopic examination we cannot see (at least I have not

seen, nor has Desormeaux) the orifices of lacunæ, nor of the ejaculatory ducts, nor the verumontanum; the catheter seems to efface these parts in its transit; but we can observe the colour and state of the lining mucous membrane, and notice how, disposed in longitudinal folds, it closes centripetally upon the opening of the tube, giving to the portion in view the outline of the cloaca of a bird, or, in miniature, the appearance of the vagina during withdrawal of the speculum (*vide* Fig. V., chromo-lithograph). This fashion in which the urethra closes upon the tube is important to notice, because it is peculiar to the elastic and supple condition of health.

No more fascinating temptation could present itself to my mind, at the present time, than the wish to enter into a full analysis of M. Desormeaux's beautiful and philosophical discussion of the subject of urethritis, occupying from page 26 to page 83 of his memoir; but I feel that the suitable limits of an article such as the present would render the attempt impossible. I shall, therefore, make but a few remarks on the subject, and hope I may thereby enlist the interest of others in this most important investigation.

Physicians are well aware that inflammation of the urethra, accompanied by discharge, may arise from many different causes; and, inasmuch as the course and consequences of such affections vary with their origin, a positive diagnosis, especially in the chronic stages, is needful both for the satisfaction of the practitioner and the advantage of the patient.

Urethritis, for the most part arising from *specific contagion*, may nevertheless, be produced by the passage of a catheter, by contact with nonspecific vaginal discharges or with chancrous pus, by venereal excesses, errors of diet, ingestion of irritant articles of food and drink, the use of cantharides, the influence of teething, intestinal worms, herpetic, rheumatic, and gouty affections, and other causes needless to enumerate.

Under all these various circumstances its course and consequences will alter materially.

The *leading distinction* consists in the fact, that while all other varieties incline more or less certainly and rapidly to a natural cure, that which arises from specific contagion, or blennorrhagia, tends to run a regular and lengthened course, and to merge into a chronic form, characterized by slight colourless discharge, or blennorrhea as it is termed, uneasiness in the perineal region, and an insidiously increasing difficulty in micturition, which finally, if neglected,

terminates in organic urethral stricture. Such being the case, it is a matter of vital importance to study with the endoscope the clinical history of this malady, to watch its course, and to ascertain whether there be any signs by which it can be recognized without fail, or mode of treatment by which the above mentioned untoward results may be prevented.

The earlier stages of blennorrhagia are characterized by inflammation of so painful a description that the use of the endoscope is wholly impossible. However, when the more acute irritation subsides, we are able to notice that the inflammation of the passage *spreads gradually backwards* until finally it reaches the prostatic region. From this period out it selects, usually, one of two courses. It either gradually abates completely and leaves the parts as they were before, or it settles in the posterior part of the canal, from the bulbar to the prostatic portion, and there brings about changes which we shall proceed to consider.

Once having seized upon the deeper portion of the canal, the bulbar region appearing to be its place of selection beyond all others, the inflammatory action assumes a new type. In place of the simple redness of the mucous membrane, and unevenness from stripping of the epithelium, hitherto observed, the part assumes the appearance of the conjunctiva of a chronically inflamed eyelid, and, in fact, becomes *granular.*

This granular condition, once fully established, appears to have no natural tendency whatever to cure, but rather goes on to the production of submucous effusion, which causes more or less coarctation of the canal and distress in micturition. This form of constriction of the urethra, as well as that from tumefaction of the mucous membrane occurring in the earlier stages of the complaint, differs essentially from the true organic stricture, wherein the granular stage, now under consideration, is certain to end sooner or later if neglected.

The pathological condition just described constitutes a stage in the course of the disease at which the patient is very likely to seek advice. The symptoms are sufficiently characteristic. He complains of a slight discharge, especially noticeable in the morning, often but not always, colourless; of some little trouble in passing the urine, which, if examined, is found to contain lymphy floculæ; of some tenderness in the perineal region; and, in addition, details the history of an antecedent blennorrhagia of date more or less remote. If a bougie be introduced it will discover a painful spot

in some portion of the urethra, and will, most probably, when withdrawn, be found tinged with blood.

In such cases the endoscope clears up all doubt, and in the great majority of instances enables us to recognize the granular condition in some portions of the canal. This once ascertained, treatment is a matter of facility. Cauterization which cures granular conditions of mucous membranes elsewhere—in the eyelids, uterus, &c.—will cure it here; and, thanks to the endoscope, can easily be applied to the exact spot diseased. Some caution is needed in the application of caustic for the cure of granular urethritis. The method which I prefer is as follows:—Having brought the anterior portion of the granulating surface into view I first carefully wipe it dry with a portion of wadding carried down by a suitable rod. I next take a second rod, armed also with cotton wadding, and, having dipped it in a solution of nitrate of silver or sulphate of copper (xv.—xxx. gr.—ʒi), pass it down to the diseased part and hold it in contact therewith for a few seconds. I then withdraw the rod and endoscope catheter. This operation causes very bearable pain, which may be removed by a warm bath and moderate anodyne. In the milder cases when next we proceed to use the caustic—perhaps in the course of four or five days—we find that the portion last touched is healed, and that the endoscope catheter penetrates further than before without causing pain. A second portion may now be cauterized, and in like manner, by degrees, the whole diseased surface cured. Under the influence of the caustic the granulations disappear—certainly, though rarely quickly—submucous effusion is absorbed—constriction disappears— and finally, the parts return to a condition of health from which they are not liable to relapse spontaneously.

For illustration sake I may here give brief notes of a case of chronic granular urethritis which lately came under my notice and care. A gentleman, aged twenty-four years, of strumous and delicate constitution, contracted blennorrhagia fifteen months ago. When almost entirely well of it he caught a second infection some months later. Now the disease showed itself obstinate, and, despite a vast amount of treatment he retained a chronic discharge, with some scalding, some uneasiness in the perineum, and latterly he was annoyed by slight dysuria, and by a swelled and tender testicle. About the close of last February he placed himself under my charge.

I at once carefully examined the urethra with the endoscope, from the neck of the bladder to the orifice. The condition of parts

which I discovered was as follows:—The prostatic portion of the urethra was injected and slightly inflamed; the membranous portion was quite healthy; the bulbous portion was *ulcerated and granular*, exquisitely tender, and bleeding on the most gentle touch. Its appearance is well represented by Figures II. and III. of the accompanying chromo-lithograph, which has been admirably executed for me by Mr. Lewis, of Dame-street, from a drawing taken from nature by the accomplished artist, Mr. Connolly. Fig. II. shows the granular condition well marked, and Fig. III. exhibits it smeared over with blood which has just exuded from its surface. Fig. V represents the healthy appearance of the anterior portion of the urethra in the same patient. Having made a precise and satisfactory diagnosis, I proceeded, with the help of the endoscope, to cauterize the granular ulceration, commencing from before, and passing backwards. Fig. IV. shows the appearance immediately after each cauterization. The case rapidly got well, and after six cauterizations, extending over a period of five weeks, the granulations were removed and the endoscope catheter could be passed into the bladder without causing the slightest pain. The discharge and perineal uneasiness also disappeared, and the swelling of the testicle—which I attribute to engorgement of the prostatic portion of the urethra, caused by the slight obstruction in micturition—having yielded to strapping, has not shown the least tendency to return. Of the utility of the endoscope in this case I shall only say that, in the first place, it enabled me to make a precise diagnosis at once, and subsequently greatly facilitated treatment. I do not know how I could have cured this case without its aid, because strong caustic solutions were required to conquer the granular ulceration of the bulbar region, and I could not have used injections of adequate potency without seriously damaging the anterior part of the canal, which was sound.

From this and other cases which I have examined and treated, as well as from M. Desormeaux's more extensive experience, I am strongly disposed to believe that the chronic granular urethritis which I have just described, is the pathological condition most frequently associated with gleet, and constitutes the transition stage between the acute inflammatory constriction produced by blennorrhagia, and its final issue in organic stricture.

I think it scarcely needful to speak of the importance of diagnosis in this affection, or to urge the utility of the endoscope respecting it. To this instrument our knowledge of the disease is entirely due,

as well as our present ability to treat and control it.   The absolute necessity of efficient treatment is urged upon us by two serious considerations.   In the first place, the discharge from the granular surface is undoubtedly contagious, as M. Thiry of Brussells has proved experimentally, and retains this quality in every stage of its existence.   M Desormeaux[a] mentions a case which clearly proves its infectious nature, even when the disease had become so chronic that it actually escaped the notice of the patient.   Moreover, if left uncured, granular urethritis is certain, sooner or later, to produce organic stricture.   The submucous effusion becomes organized, the inflammation spreads to the fibrous structures of the urethra, and the whole morbid mass terminates by undergoing a cicatricial shrinking, which produces contraction notoriously difficult to remedy.   The time occupied in the process is uncertain, but the final result none the less sure in the vast majority of cases.   A few years generally suffice, although there are marked exceptions.   Desormeaux[b] mentions one case in which chronic granular urethritis existed for eleven years without producing organic stricture, and another[c] of over forty years' standing, in which that stage had not been reached. I have good reason to believe that the disease has existed nine or ten years in a patient lately brought to me by my friend Dr. James Brady, and yet in that instance no stricture exists.

There is one circumstance connected with chronic granular urethritis of great significance, namely, that during its entire duration it is liable under the stimulus of erotic excitement to assume an acute form, with muco-purulent discharge.   Herein, I believe, lies the explanation of the supposed proclivity of individuals to infection, which is familiar enough to the practitioner.

Desormeaux makes the highly interesting and important observation that, for the most part, whenever we find a chronic and intractable inflammation of the testicle, an endoscopic examination will exhibit granular disease in some deep portion of the urethra. This fact, if discoverable, will always give a valuable hint relative to the origin and treatment of this complication, and the absence of the urethral affection may, perhaps, even be looked on as diagnostic of a disease of the testicle, arising from some other cause, such as tuberculosis, not directly connected with the urino-genital organs.   It will probably occur to many that Desormeaux's observation is but a confirmation of an opinion held long

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 [a] Op cit, page 69.   [b] Op. cit., p. 48.   [c] Op. cit., p. 55.

ago by Mr. Ramsden of St. Bartholomew's Hospital, whereby he connected many chronic affections of the testicle with disease of the deeper portion of the urethra.

The length to which the foregoing observations have extended forbids any attempt to enter upon the description of the endoscopic appearances presented by other urethral affections, as well as any allusion to the complications and treatment of each. I may however observe in brief that in no disease, blennorrhea alone excepted, do we find a *persistent* granular condition of one portion of the passage, with submucous effusion and consequent chronic inflammatory constriction of the canal. In a future paper, I hope to discuss at greater length the subject of urethritis and its varieties.

Heretofore we have discussed the value of the endoscope principally in reference to the study of blennorrhea. Now we shall consider the light which it is capable of throwing upon that disastrous and frequent sequel of blennorrhea—urethral stricture. Without entering into any exhaustive discussion upon stricture we may here call to mind the three varieties which are immediately connected with specific urethritis:—

First.—The acute inflammatory form, due to tumefaction of the mucous membrane, and seen during the height of the ailment.

Secondly.—The chronic inflammatory constriction produced by the granular state of the canal already described. And

Thirdly.—The true organic stricture, due to the cicatrization of parts long the subject of the granular condition.

These varieties, it is plain enough, are merely different stages of the same disease. Of the first we have little to remark in connexion with endoscopy; the tenderness of the parts forbids the use of the instrument, and the urgent symptoms subside naturally with the abatement of the acute stage of the blennorrhagia. The second variety, though but little understood hitherto, is of great importance. The existence of this transition stage between the acute inflammatory and organic stricture was first, I believe, pointed out by M. Robert, but our knowledge of its etiology, and our powers of rational treatment, as we have seen, are solely the work of the endoscope.

The third variety, or organic stricture, remains to be considered.

We shall not delay long upon the anatomy of organic stricture; suffice it to say that in the vast majority of cases it is neither more nor less than a cicatricial condition of parts long diseased, and is

itself actually the result of the cure of the preceding stage, or chronic granular urethritis; just as contraction of the fingers is often the result of the healing of ulceration following a burn or injury of the palm of the hand.   Traumatic stricture, too, although different as to its mode of origin, is very similar in its organization. Like other cicatrices organic stricture is indurated, sparingly vascular, contractile, and little susceptible of vital processes. Hence we find it difficult to dilate, and when dilated speedily to re-contract; difficult, in fact, to get rid of by any process natural to highly organized structures.   Its treatment necessitates far more than the chronic inflammatory or granular constriction already considered, and to obtain even a temporary success we must either cut or burst through it; in fact treat it as we would a cicatrix in any other situation which produced untoward effects by its tightness.

For these reasons it is manifest that a precise diagnosis is absolutely necessary; and inasmuch as the selection of the mode of treatment depends upon that diagnosis, the sooner it is made the better.   The endoscope alone, I believe, can enable us in all cases to arrive immediately at a positive conclusion on the subject.

An experienced hand, armed with the instruments in common use, especially the bougie terminating in a bulbous extremity, or "bougie à boule" of the French writers, can, in many instances, ascertain, without further aid, a great deal about a stricture; but certain points, nevertheless, are left in obscurity.   With the help of such a bougie the existence and seat of obstructions can be learned with tolerable accuracy, also their number, length, calibre, elasticity, retractility, and consistence, yet, much experience and habit is required on the part of the examiner; and skilful practitioners will differ from time to time regarding the nature of a particular case, thereby proving the doubtfulness of the matter.

The endoscope, however, clears up all uncertainty, enabling us, upon the moment, to see the constriction and make a positive diagnosis of its nature.   Furthermore, it shows us the form of its anterior extremity, the exact position of the orifice, and the colour and state of the mucous membrane around and about it.

Nothing in medicine can be more certain than the diagnosis of organic stricture with the aid of the endoscope.   On bringing the part into view we find it to present either the dull whitish aspect with which we are familiar in cicatrices in other situations, and in

post mortem examinations of strictured urethræ; or we discover its investing mucous membrane injected, red, or even granular, and ulcerated.

On proceeding to examine the parts with the probe, Fig. 7, introduced through the aperture in the exploring tube, we   Fig. 7. obtain information of a perfectly conclusive nature. When the constriction is organic, the parts touched with the probe, whatsoever their appearance may be, give a most characteristic sensation of induration, and move *en masse* before it. The actual amount of hardness is thus easily felt and recognized.

On proceeding to withdraw slightly the instrument, we observe the manner in which the consolidated and inelastic parts refuse to follow and close up after it; and on re-introducing the tube, the eye of the observer remaining undisturbed, we notice the fashion in which the immovable face of the stricture abruptly comes again into view. Nothing can be more characteristic than the signs just described. Written descriptions fail often to convey sensations easily understood when experienced, but I am quite positive that any one who has once examined endoscopically an organic stricture of the urethra, will acknowledge the impossibility of confounding it with a fold of mucous membrane, with a deviation in the canal, with the obstruction sometimes offered by the triangular ligament of the perineum, or, in fact, with any other condition of the part.

Besides aiding in the diagnosis of stricture the endoscope shows us many interesting points connected with it. It enables us easily to recognize the configuration of its anterior extremity, and a little experience shows us how this varies. Sometimes it is infundibuliform, sometimes shelf-like, sometimes presenting a number of minute projections which surround more or less regularly the orifice. On the whole, I think the latter disposition is most commonly met with, and corresponds to what Desormeaux terms " la forme mamelonnée." The orifice of the stricture can in most cases be easily made out, and we notice how much it varies in position. For the most part I have found it situate in the lower segment of the urethral tube, as if the deposit of indurated tissue were principally confined to its pubic aspect; but in this respect it varies much; occasionally it is very difficult to make it out, even after careful examination with the probe. I have noticed one

circumstance in a great number of cases which I believe to be worth recording, namely, that the parts *immediately surrounding the orifice* are more prone to bleed when probed than other portions. This fact has often given me a valuable hint, and induced me to persevere in my endeavours to penetrate the opening.

I need hardly observe that the variation in the form of the anterior aspects of strictures, and in the position of their orifices, such as I now mention, satisfactorily explains the facility or difficulty which cases present in the introduction of an instrument into the bladder. Many of my *confrères* in Dublin, who have done me the honour of inviting me to examine their cases, and of inspecting some of mine, will call to mind the applicability of the foregoing remarks upon urethral strictures to instances in which I have demonstrated all that I now put forward.

After what I have already stated of the use of the endoscope in the examination of strictures, it is hardly necessary for me to insist upon its manifest utility in their treatment.

As we have seen, it lends itself to the discovery of the orifice and to the introduction of a probe, and this first step in treatment paves the way to cure; nay more, under circumstances of great difficulty, in retention of urine, it may enable the practitioner to penetrate the obstruction, and thus save from the serious alternative of puncturing the bladder, or of cutting down upon the stricture in the perineum without the aid of a director. M. Desormeaux mentions such a case which occurred in his practice,[a] and a somewhat analogous one has happened in mine.

M. Desormeaux's case was that of a man named M., aged thirty-six years, who laboured under stricture of traumatic origin for five years. At the end of this time, being in great suffering, he entered the Hôpital Necker in December, 1862, under the care of M. Civiale. This eminent and accomplished catheterist tried, during twenty-eight days, to pass an instrument into the stricture, but without success. He then called upon M. Desormeaux to try what he could do with the endoscope. M. Desormeaux, at the second endoscopic *séance*, January 11th, 1863, succeeded in passing a fine bougie through the constriction, and from that time treatment was carried out with facility and good results.

My own case was that of a man named E. B., aged seventy-three, who is still under my care in the Mater Misericordiæ Hospital. He

Op. cit., p. 107.

entered early in March, 1865, suffering much from a tight stricture of old standing, and originating in blennorrhagia. I long tried in vain all description of bougies, but could not succeed in introducing one until, on the 15th of March, at the third endoscopic *séance*, I passed a probe through the constriction. Having left it in place for a short time, on withdrawing it I was able to get in a small bougie, and since then the case has progressed so favourably under treatment by gradual dilatation, that I am now able to pass a fair-sized instrument. The extreme age of this patient forbade the adoption of any more decisive method of treating the stricture than progressive dilatation, so I have taken the opportunity of watching endoscopically the appearance presented by the parts during the process. The local results, thus seen, appear to me very interesting. In brief, I may observe that the effect of instrumental dilatation upon the stricture was to *inflame* it in a very decided manner, and in fact to a great extent to bring it into a condition resembling granular urethritis—differing, however, from the latter affection in the existence of a surrounding callous ring. On several occasions, when for a few days treatment was suspended in consequence of vesical irritation and other causes, the inflammation subsided, but the stricture again recontracted, giving me the impression that the temporary cure was consequent only upon the temporary inflammation and partial absorption caused by the use of the bougie. In a case of stricture treated by gradual dilatation, which Dr. P. C. Smyly kindly gave me an opportunity of examining at the Meath Hospital, a very similar condition existed; so also in two cases of organic stricture under Dr. Quinlan's care in St. Vincent's Hospital, which I examined for him both before and after treatment. Should further experience confirm this observation, I think we may be considered to have arrived at a satisfactory explanation of the reason why progressive dilatation of organic stricture produces no permanent benefit—and also to have acquired the power of judging, from the endoscopic appearances in any case in point, whether treatment by dilatation is likely to be followed by immediate relapse or not. Figures VI., VII., and VIII., of chromo-lithograph plate, represent the stricture at different stages, as seen in the case of E. B. Fig. VI. shows it before treatment was commenced, pale and cicatrix-like in aspect, mammillated in form, with the opening in the centre. Fig. VII. exhibits it moderately inflamed during the earlier periods of treatment. Fig. VIII. is intended to illustrate

its appearance as seen in the endoscope with a bougie introduced. During later periods it became of deeper colour, approximating to the hues in Figs. II. and III.; but, even then, although a good-sized bougie (No. 9 or 10) slipped with the greatest ease through it, I could, with the endoscope and probe, most distinctly feel the surrounding ring of indurated tissue.

However, to return to the question of the utility of the endoscope, I think it may be looked on as proven that in many instances it is capable of giving valuable assistance in the introduction of an instrument through strictures impregnable to other modes of attack. I can easily imagine its triumphant success in a case of tight and otherwise impassable stricture, wherein, having by its aid got a fine conductor into the bladder, Dr. Hutton's railroad catheter might be slid over it, and retention of urine relieved. For my own part, I am confident that time and opportunity are alone wanting to develop the resources of the instrument under these and similar circumstances of difficulty.

Useful as progressive dilatation may be as a preliminary step in the treatment of stricture, we are but too often compelled to adopt more decisive methods in order to obtain lasting relief. Of these methods rupture and division by cutting appear to be the most eligible, and our choice mostly lies between them. Of the employment of destructive caustics I shall say nothing, as I am convinced it is worse than useless.

Rupture, by Holt's method, has already been proved experimentally a useful mode of treatment, but it is now a matter of certainty that it is not, as was at first supposed, free from all immediate danger, or liability to relapse. This might be expected *a priori*, because, from the eccentric position of the canal of the stricture occasionally noticed, we can understand that the laceration must sometimes extend into sound rather than callous parts, and consequently immediate danger of hemorrhage and infiltration be incurred, and of recontraction of the constriction so soon as healing ensues.

If, on the other hand, the laceration opens up the callous parts alone, permanent relief may be anticipated. I lately examined endoscopically, with great interest, a patient sent to me by Dr. P. C. Smyly, who had performed this operation on him more than a year ago. The case was one of undoubted organic stricture, of remarkable closeness, and of twenty years duration. Gradual dilatation had been repeatedly used, but was invariably followed by

immediate relapse. However, since being ruptured, the stricture never closed sufficiently to cause distress, or to prevent the introduction of a catheter of No. 9 or 10 size. On inspection, I found in the site of the constriction an open vertical slit, about three-sixteenths of an inch in length, and all the surrounding parts indurated and cartilaginous. The mucous membrane was, moreover, chronically inflamed. In a case operated upon last October by Dr. R. M'Donnell, a similar condition of parts existed, with the exception that the slit was crescentic and somewhat transverse, and the state of the mucous membrane was less unhealthy. In fine, the mode of cure by Holt's method appears to be laceration of the indurated tissues, which should be prevented from reuniting by the careful after-use of dilatation.

In the hands of many practitioners division of the constriction has been found eminently successful, and upon theoretical grounds this might be expected.

The division of external cicatrices, followed by moderate care to maintain parts in the desired position, on the whole, is a mode of treatment generally successful, yet, as now-a-day practised, urethrotomy is liable to great objections.

We need not enter into minute details of the various methods of accomplishing division of organic stricture. External urethrotomy without a staff is a formidable proceeding, suited only for those cases in which acute retention obliges us, after the failure of other methods, to choose between it and puncture of the bladder. Perineal section with staff, after the method of Syme, is but little better. Internal urethrotomy by the methods of Stafford, Civiale, Sedillot, and Maisonneuve, are open to the same serious objection as Holt's method of dilatation, namely, that although by any of them we can open up the constriction, we cannot tell whether in so doing we divide the sound or indurated parts. If, perchance, we touch the diseased parts alone, all is well; but if, from the impossibility, heretofore unremedied, of knowing and following the exact disposition of the canal of the stricture, we cut into the healthy parts, then, as in the method by rupture, we incur immediate risk of hemorrhage and infiltration; and so soon as these parts heal up the case is in the same position as before. In a word, the operation is a failure, and full of risk.

Now to clear up the difficulties of those embarrassing cases in which division of a stricture becomes necessary, the endoscope comes to our aid and gives invaluable assistance. When the stricture is

brought fairly into view, and its orifice discovered by means of the probe, the operator can see the exact disposition of the indurated parts, and can easily, under his sight, divide the stricture, confining his incisions to the indurated and callous parts. M. Desormeaux uses for the purpose a miniature button bistoury, with a handle similar to that of the probe represented by Fig. 7. I would venture to propose instead a blade somewhat different, which is represented by Fig. 8. It will be noticed that it has a long probe point and a short cutting edge, which is blunted towards its posterior extremity, *a*, so as to limit the incisions to the contracted parts, as in Maisonneuve's urethrotome. Such precaution is hardly necessary, as the stricture can be incised under the eye of the operator, but it is an additional safeguard against an over extensive division of the parts. The stricture being in view, and the orifice discovered, this knife should be introduced carefully into the catheter of the endoscope, so as to avoid injury to its cutting edge by contact with the interior of the tube. The catheter may then be rotated, so as to bring its slit into the requisite position to enable the operator to turn the edge of the urethrotome in any direction he may think desirable. Now its probe point may be engaged in the orifice of the stricture, and the instrument gently pressed onwards until the constricted parts yield. The after treatment consists in the use of quinine and opium to prevent urinary fever, and careful dilatation to maintain the incision patent.

Fig. 8.
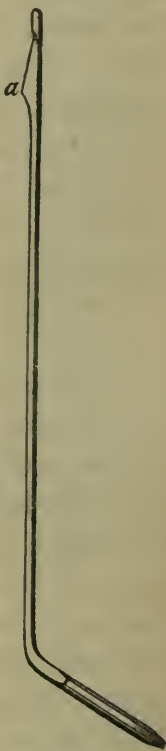
The extreme simplicity of this proceeding renders further details unnecessary, and I may observe that M. Desormeaux, who has performed it a great many times, has found it easy of execution, free from risk of considerable pain, hemorrhage, infiltration, or serious shock to the constitution, and moreover very efficacious in its results. One of its greatest advantages consists in its applicability to cases of acute retention of urine; and there is no doubt it will often obviate the necessity of perineal section without staff, or puncture of the bladder.

Its performance is a matter of facility in all instances wherein the endoscope enables us to pass a probe into the orifice of the constriction, and, as we have seen, this has been repeatedly accomplished in strictures which defied all other manœuvres.

There is a frequent and distressing complication of urethral stricture, in the treatment of which it seems probable that the endoscope may prove a useful help to the practitioner. I allude to urethral fistulæ.

Although these frequently heal up on the removal of the stricture, unfortunately it is not always so. The continuous wearing of a catheter for some time, with pressure by compresses, and cauterization of the tract with a probe dipped in melted caustic, have from time to time been found successful; nevertheless, in many instances these and the like measures fail, and free division of the fistulæ becomes requisite. This is a severe operation, and one to be avoided if possible.

There is one point respecting urinary fistula, hertofore neglected, which, doubtless, is of great importance, namely—the condition of the *internal orifice*, and this the endoscope allows us to investigate. If this opening permits the urine to enter the fistula it is futile to hope that external pressure, cauterization, or other measures can succeed. On the other hand, if the portion of the false passage nearest to the urethra can be rendered healthy and closed up, the obliteration of the remainder follows as a matter of course. Now, the endoscope enables us to examine the internal orifice of the fistula—to ascertain whether it presents the characteristic papilla and surrounding boggy ulceration which the external orifice always presents; and, in case we think requisite, it enables us to apply caustic directly to the spot, so as to favour the healing process.

The nitrate of silver may be applied either with a miniature porte-caustique, or with the endoscope probe, its point having been dipped in the melted lunar caustic. I much prefer the latter device whenever the solid nitrate of silver is required, as there is no danger of a portion becoming detached and remaining in the urethra, where it might give rise to serious inconvenience. After the application of the caustic, injections of a weak solution of common salt and water may be used to limit its action and prevent undue irritation. Should this treatment fail, more decisive measures remain in reserve, and the endoscope even now is of service, exhibiting the course taken by the probe, and thus helping us to ascertain the point at which the fistulæ enter the urethra, and so guiding us while planning the operation best suited to the exigencies of the case.

A few words, before we leave the endoscopic study of the urethra, on the use of direct exploration in affections of its prostatic portion.

We have seen how frequent are granular ulcerations of the bulbous portion, and how injurious from their tendency to produce constriction.   Granular ulceration of the prostatic portion, although by no means as common, is a very serious disease.   Among its evil consequences we observe chronic enlargement of the gland, which is liable, on slight provocation, to merge into the acute form, painful irritation of the neck of the bladder and of the rectum, and forms of spermatorrhea most rebellious to treatment.   The prostate is also liable to calcareous depositions—to excavating ulcers of strumous origin—to cancerous disease, and to chronic enlargements, often affecting the middle lobe in such a manner as to produce great difficulty in micturition.

With the endoscope the differential diagnosis of these and other prostatic affections is a matter of facility and positive certainty, and topical treatment can be efficiently directed to such as are likely to derive benefit therefrom.   In my own practice I have found it most useful in the diagnosis and treatment of certain forms of spermatorrhea.

This latter subject, if fairly discussed, would occupy much larger space than the present article; therefore I shall confine myself to a few practical observations.   I think one of the nicest points to determine in a case of seminal incontinence, is, whether the malady is directly connected with a morbid state of the genital organs, or referable to a far more general pathological condition.   Even granting it to be clear that it is really dependent on some lesion of the generative apparatus, it is occasionally difficult to ascertain whether its origin and cause entitle it to be classified as *irritative* or *atonic* in its nature.   Of the *sthenic* variety I make no mention here, as its diagnosis hardly admits of uncertainty; neither do I mean to imply that well-marked cases of the irritative and atonic forms are liable to be confounded; but the difficulty, I believe, rests in this, that, whatever its origin may be, the ailment tends finally to the atonic phase.   Withal, it is absolutely necessary for success in treatment that a correct diagnosis be made in the first instance, because no amount of remedies directed to the constitution alone will suffice to cure a case of irritative spermatorrhea; and, on the other hand, no amount of topical medication will even benefit one purely atonic in character.

Without delaying upon this subject, which is quite sufficiently important to justify a separate paper, I would observe that it is of the utmost importance to discover the exact condition of the

prostate, and especially of the prostatic portion of the urethra, in all cases of obstinate seminal emissions. If the mucous membrane thereabouts be inflamed and ulcerated, and the gland engorged, local treatment is of primary consideration. Nothing short of the cure of the local disease will appease the irritation of the orifices of the ejaculatory ducts which reacts so prejudicially upon the testicles, keeping them in a state of continual activity in consonance with the well-known law that glands are stimulated by irritation of their excretory ducts.

In our uncertainty the endoscope gives invaluable aid, shows us the condition of the prostatic portion of the urethra, and enables us to cauterize and heal it if need be. The application of caustic to the prostatic urethra was lauded years ago by Lallemand as a specific in all cases of spermatorrhea. A little experience, however, demonstrated that it did not universally succeed—in fact, that it acted like a charm in some instances, while in others it totally failed. Additional knowledge has led to the opinion that its successful operation is confined to those cases wherein the prostatic urethra is *highly irritable.* This I fully believe to be the truth, but, until I used the endoscope, I remained always in uncertainty relative to diagnosis.

The commonly accepted test of *pain* caused by the passage of a bougie through that region of the urethra, is exceedingly fallacious, because at best the part is exceedingly sensitive, and patients who are not used to such explorations are certain to wince and complain when the instrument reaches the vicinity of the neck of the bladder. The only satisfactory proof of disease thereabouts is ocular demonstration, and this the endoscope gives us. Some time ago I cured a bad case of spermatorrhea, caused by ulceration of the mucous membrane of the prostate, by two thorough cauterizations effected with the endoscope, and at the present time I have another under treatment.

Many years ago I devised an instrument (Fig. 9) for the application of caustic solutions to the urethra in these cases; and, in the absence of more precise means, I, and several medical friends who tested it, found it most useful.

Solid caustics, I think, are objectionable, except when applied with the aid of the endoscope, for all instruments with a slide to project are apt to lacerate the urethra and do mischief. Those intended for liquid applications, for the most part are objectionable, because they do not confine them to the spot where they are required. My

instrument, however, meets these objections most satisfactorily.   It consists, as may be seen by reference to the woodcut, of a catheter,

Fig. 9.

which terminates in two balls connected by a narrow shank; this shank is perforated by several small apertures, and communicates with the tube of the catheter; the latter is surmounted by a small gum-elastic bottle, which holds the solution intended to be applied.

For use, the instrument is first charged.   This is easily effected by compressing the Indian rubber bottle, then immersing the end of the instrument in the solution, and withdrawing the pressure; the weight of the atmosphere now drives the fluid into the elastic bottle.   The instrument, having been wiped dry and oiled, is introduced; so soon as it arrives at the tender region, slight pressure is made on the gum-elastic bag, and thus the fluid is squeezed out through the perforations in the narrow shank.   The balls prevent the liquid from spreading to the parts beyond, while, at the same time, they distend the portion of the urethra corresponding to the narrow shank, and thus ensure its thorough contact therewith.   As soon as the operator wishes to remove the instrument, he relaxes the pressure on the bottle—the fluid then re-enters the catheter, which may be withdrawn.   In cases where I have made the diagnosis of granular ulceration from an endoscopic examination, I frequently use this instrument for subsequent cauterizations, as it is quick in operation, and unlikely to frighten a timid patient.   The solution I prefer in most cases is ten or fifteen grains of sulphate of copper dissolved in an ounce of distilled water; I find it less irritating than nitrate of silver, and equally efficient.   For an unpractised hand it is a wise precaution to operate when there is some urine in the bladder, as thus any of the fluid which might perchance enter it is at once decomposed and rendered innocuous.

Diseases of the female urethra are rare, contrasted with those in the male subject, nevertheless they do occur from time to time, and give rise to frightful suffering.   The endoscope appears likely to be a useful assistant in their diagnosis and treatment.   I may here allude to a case of this nature, which Dr. Aquilla Smith has kindly asked me to see and treat in conjunction with him.

The case is that of a young unmarried female, who, for the past two years, has suffered atrocious pain during and after passing water. The urine is healthy, and nothing can be detected, by an ordinary examination of the parts, to explain the distressing symptoms. Latterly her general health has given way to a certain extent from the excess and continuity of the pain. Having, in vain, undergone an endless variety of treatment, she lately placed herself under Dr. Smith's care, and by his request I saw her. An endoscopic examination, which was made with difficulty, owing to the nervousness of the patient, and the pain which it produced, revealed a morbid condition of the urethra, near to the neck of the bladder. In this situation the passage, for about half an inch in length, was highly vascular, granular, and of the colour of a mulberry.

The special treatment which naturally suggested itself, and was determined upon by Dr. Smith and myself, was thorough cauterization of the diseased part with nitrate of silver. On the 31st of March I performed this operation, with the assistance of the endoscope; it caused sharp pain, which lasted for some hours. However, the patient told me to-day (April 4th) that since the cauterization she has obtained more relief from suffering than she has known since the commencement of her disease. Encouraged by this success I repeated the application, and hope, at some future time, with Dr. Smith's permission, to record the termination of the case. It reminds me forcibly of an instance mentioned by Desormeaux, in which horrible pain at the neck of the bladder, in a gentleman under his care, was caused by a small fissure-like ulcer, situated thereabouts—which, moreover, was easily cured by a few cauterizations.[a]

Before concluding I shall make a few observations on the utility of the endoscope for the examination of the interior of the bladder.

With respect to the practicability of the operation, I may remark that in a large proportion of cases it is quite possible to obtain a satisfactory view of the interior of that viscus, and to acquire by that method of investigation information otherwise wholly unattainable.

For the performance of vesical endoscopy certain conditions must be fulfilled. In the first place, the bladder must be distended somewhat, in order to give the exploring implement space to move

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[a] Op. Cit., p. 155.

about; and moreover, the fluid distending it must be transparent. Clear tepid water is the most suitable and convenient fluid, and should be injected with a double-current catheter until the interior of the bladder is thoroughly washed out, and the returning fluid appears perfectly limpid. Next, an instrument must be provided to convey light, and permit the observer to look into the viscus, and inasmuch as the latter is full of liquid, the extremity of the exploring tube must be closed with a piece of transparent glass. The instrument which Desormeaux uses is represented by Fig. 10, and in shape resembles the catheter recommended by Mercier in certain affections of the prostate gland.

Fig. 10.

At the extremity of the long shaft a little window of glass is let in to permit the transmission of light, and is carefully cemented round, so as to render the instrument water-tight. The glass is set in a somewhat slanting direction, so as to obviate the reflection of the light from the perforated mirror, which might greatly embarrass the observer.

This form of catheter is easily introduced into the bladder, and then the endoscope may be attached thereto.

As the instrument is moved about, the eye of the examiner can see, bit by bit, the whole surface near to which its glazed extremity can be brought, namely, the border of the prostate, the trigone, the fundus, and greater portion of the posterior surface. The endoscope being held in the left hand, and manipulated therewith, the index finger of the right hand introduced into the rectum can give much assistance in the investigation, by raising the fundus and bringing it into proximity with the exploring tube. The anterior surface of the bladder has heretofore eluded ocular examination, but I am sanguine of being able to remedy this disability; fortunately, it is rarely the seat of disease.

This cystoscope of Desormeaux is liable to certain practical disadvantages. In the first place, the glass is rendered dull by the oil and urethral mucus which it comes in contact with during introduction, and cleaning of it is impracticable. Moreover, if, during an examination, the water in the bladder becomes turbid, from slight bleeding or any other cause, it is requisite to withdraw the cystoscope, resort to the double current catheter, and then reintroduce it. To avoid these faults I have had an instrument

made after my own designs, by Messrs. Thompson and O'Neill, of Henry-street; its various parts are represented in Fig. 11.
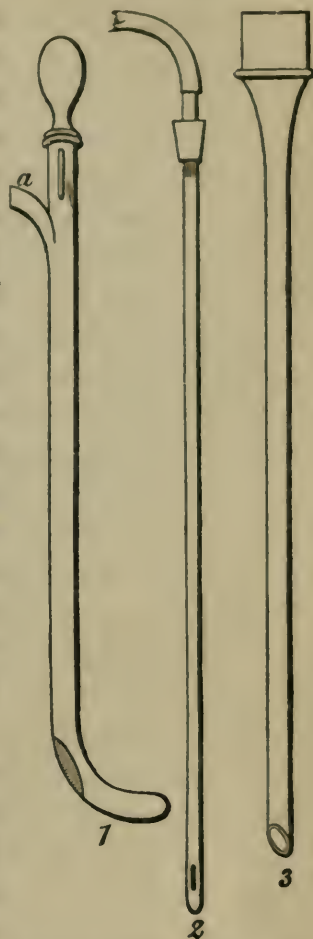
It consists of a full sized catheter, 1, with a very short curve, and on the curve is an opening, made, as it were, in continuity with the shaft. To facilitate introduction there is a wooden plug, which is represented as being in the instrument. After introduction the plug is withdrawn, and the small flexible catheter, 2, inserted; the latter is connected with an enema pump, which, for sake of clearness, is omitted from the woodcut. By its means tepid water is pumped into the bladder until, after distending same, it returns alongside of the small catheter, and delivers itself externally at *a*. The pumping is continued until the water returns perfectly limpid, when the flexible catheter may be withdrawn, and the tube, 3, with glass window at its extremity, introduced in its stead. The latter is made of such a size as to fill accurately the catheter, 1. By this arrangement it will be perceived that the glass window is not smeared with oil or mucus, and thereby rendered dull. Moreover, if perchance it should become so, or the contents of the bladder become turbid, the tube, 3, can

Fig. 11.

be withdrawn and cleaned, the catheter, 2, introduced, and fresh tepid water pumped in until it returns limpid. All this done, the tube, 3, may be re-introduced, and the examination proceeded with.

So much for the details of the operation; now we may consider how far the endoscope can serve us in the investigation of the bladder. It enables us to see the mucous membrane lining the portions already named, to recognize its pale whitish rose colour and smooth surface in health; its various deeper shades in cystitis, acute, subacute, and chronic—varicose vessels coursing beneath it—mammillated projections—roughning and stripping of its epithelium—ecchymoses here and there—thick tenacious muco-purulent matter adhering to it—columnar bands forming a network beneath it—saccular offsets from the cavity of the bladder—malignant tumours projecting into it, and so forth. Moreover, it allows us, while in the

act of withdrawing it, to investigate the orifice of the neck of the bladder, to see the border of the prostate, prominences of its middle lobe, valvular folds or bars, and so on.

But a few days ago Professor Macnamara requested me to examine endoscopically a patient of his in the Meath Hospital, who suffered from hematuria, depending, in his opinion, upon a diseased condition of the vesical mucous membrane. The case was rather difficult to manage from the rapidity with which blood exuded, rendering turbid the injected tepid water. Nevertheless I was able to demonstrate the interior of the bladder to my own and to Professor Macnamara's satisfaction; and it is with his permission that I mention the case. The condition of the mucous membrane was, as he had suspected, highly inflamed, and in points ulcerated; every gradation of colour, from pale rose to deep purple and almost black, could be seen, and the diseased portions recognized and distinguished from the healthy. As Professor Macnamara observed at the time, I was enabled to render the state of the mucous membrane of the bladder as visible as the conjunctiva of an inflamed eye.

With our present knowledge of the endoscope it is scarcely possible to measure the advantages which may be expected from its employment in cases of calculous disorder. Undoubtedly, by its help, in a great many instances, it will be practicable to see the stone or stones, examine the surface, colour, form, and dimension, and to obtain various practical hints. Thus, a calculus too small to be felt by the sound may be seen by the eye, and conditions of the bladder likely to be mistaken for stone—such, for example, as phosphatic incrustations—may be recognized, and patients thereby saved from needless and often fatal operations. One of the most important uses of the endoscope in such cases is the diagnosis of an encysted condition of the stone, which, with our former means, too often was discovered only during the operation.[a]

I have not chanced to meet with a case of stone since I have succeeded in making the endoscope practically available, therefore I have no positive results to show. However, on this day (April 4) my friend and colleague, Dr. Robert M'Donnell, submitted my instrument to a test upon the dead body, which I think may fairly be considered an "*experimentum crucis*," and, in illustration of its capacity, I record the trial, for the veracity of which Dr. M'Donnell is as responsible as I am myself:—He first prepared a subject by opening

[a] *Vide* Desormeaux. Op. cit., page 175, &c.

the bladder and introducing into it three substances of a nature the most unlikely to be thought of and respecting which I was in total ignorance. He then brought me to the body, and challenged me to tell with my endoscope what the articles in the bladder were. In a few minutes I was able to do so, and to demonstrate them to him. The articles were—a brass screw with a milled head, a short Miniè bullet, and a mass of plaster of Paris.

In conclusion, I have to apologize to the readers of the Journal for the length—far exceeding what I originally purposed—to which this communication has extended, and to ask their indulgence for the too obvious haste with which the materials at my disposal were thrown together. I feel that I must depend on their consideration, and kind allowances for the fact that I am myself but a neophyte in the unexplored study of endoscopy, and for the difficulties which I have experienced in stealing a few hurried moments from other engagements to record briefly my experiences in this somewhat new, but I hope not uninteresting, field of inquiry. If I have made it clear that with the endoscope it is easy to see portions of the body supposed to be wholly invisible, and thereby added even the smallest new facility towards accurate diagnosis, I shall be perfectly satisfied. If, however, I have succeeded in aiding, directly or indirectly, the relief of one iota of human suffering, and in inducing others to work with the endoscope and labour to extend its usefulness, then indeed the object of my ambition shall have been most fully realized.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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Essays and Reports on Operative and Conservative Surgery. By
RICHARD G. BUTCHER. Dublin: Fannin and Co. London:
Hardwicke. 8vo, pp. 933, with Lithographic Plates and
Woodcuts.

To the long and honoured roll of the great surgical writers and
practitioners of the Irish School, from the days of Dease, through
Peile, Collis, Crampton, Cusack, and Adams, in our own epoch,
must be added for all aftertime the name of Butcher. As an able
and original observer, an operator of no common skill and daring,
and a bold and vigorous writer Mr. Butcher has reached a foremost
place in the surgical ranks of the profession in Ireland; and much
that he has done has carried his name in honour, well deserved and
cordially bestowed, beyond the limits of his own country. Though
still in the prime of life, his work now before us claims the authority
of the experience and observations accumulated during the assiduous
labours of full a quarter of a century.

Within that period much has been accomplished in surgery as in
medicine, by advances in pathology and practice, due to the special
facilities afforded by the concurrent progress of arts and sciences,
allied to and shedding light upon the pursuits of the surgeon and
the physician.

But in no regard have the labours of the second quarter of the
present century been more remarkable than in the successful resump-
tion, in skilful hands, of operations and modes of procedure, both
medical and surgical, which in their origin belong to a past
generation. New conditions in the modes of manipulation, the
instruments employed, and the after treatment, have realized in
many instances the sanguine hopes entertained by the original
projectors of operations, which their own day saw rarely, if at all,
crowned with success, and which the next generation allowed to
pass into unmerited oblivion.

To no class of operations are these observations more pointedly applicable than to those for the relief of injuries or diseased states of the joints, and now very generally recognized by the designation of "resections."

In the interesting historical sketch of the operation of "Excision of the Knee-joint," with which Mr. Butcher's work opens (it is carried back over a century from the present day—case reported to have been operated on by Mr. Filkin of Northwich, 21st November, 1762) we find that Mr. Park, of Liverpool, performed this operation, with marked success, in a case of scrofulous disease of the knee-joint, so far back as July 2nd, 1781. Eight years subsequently, in giving an account of a similar operation, he writes of the individual first operated on:—

"To the history of the case of Hector M'Caghen, there related, I have now to add, that he afterwards made several voyages to sea, in which he was able to go aloft with considerable agility, and to pursue all the duties of a seaman; that he was twice shipwrecked, and suffered great hardships, without feeling any further complaint in that limb; but was at last unfortunately drowned by the oversetting of a flat in the river Mersey.

At a later date the translation into French of Mr. Park's *Observations on the Cutting Out the Articulating end of the Bones of the Elbow and Knee-joints*, led to the operation being undertaken by Moreau, but it met with such little encouragement that Park, writing in 1805, says:—" I am mortified to see that it (pamphlet on Excision of the Knee) has to this day produced very little of the effect it was intended to produce."

An occasional recurrence to the operation is to be noted in the annals of surgery from this period out, including the cases operated by Sir Philip Crampton in 1823.

"For practical purposes" says Mr. Butcher, "I conceive it best to divide the institution of this operation into two distinct epochs, the first comprising all the cases operated on from the time of Filkin's first case in 1762, up to the period of its abandonment after Mr. Syme's failure in 1830, and in which may likewise be included the unhappy catalogue appended after his name in the table; the second, including all those from the period of its revival by Mr. Ferguson in 1850, up to the present time."

Thirty-one cases are tabulated, with the dates of operation, the operating surgeon's name, the result, and the authorities; and in the observations in which Mr. Butcher discusses the conclusions to

be drawn from an examination of this table, he states, and for the reasons alleged we perfectly concur with him. "On superficial inspection of this table, the results of the operation, on the whole, will appear decidedly unsatisfactory. However, on closely analyzing the fatal cases, some will be found to bear but little upon the question of excision."

To Mr. Fergusson belongs the great merit of the revival of the operation, after an interval of twenty years, 1830 to 1850. Mr. Butcher furnishes us, pp. 9 to 22, with a brief notice of the most remarkable cases operated on from 1850; and we find at pp. 34, 35, an interesting tabular statement of thirty-one cases operated on, from July, 1850 to December, 1854. The next two years show a great extension of the operation, mainly due to the able support of its advocates, amongst whom Mr. Butcher, at this period, ranks conspicuous; his memoir on Excision of the Knee-joint having been widely read, commented, reviewed, and translated.

A valuable table in pp. 104, 105, 106, 107, gives us the result of fifty-one cases operated, from December, 1854, to December, 1856. In summing up the results of these cases Mr. Butcher observes:—

"Now comes the difficult and by no means enviable occupation of analysing thoroughly the results as given. The review demands grave and serious consideration. The cause of death in each instance must be strictly investigated, as well as the reason of failure in others, demanding, as a *dernier ressort*, amputation of the limb. Out of fifty operations, death followed in nine instances, from which number must be subtracted, Case XXIII., *partial* excision. Seven were subjected to amputation, and only one died. One case is said to be in a precarious way, and all the rest are either cured, with useful limbs, or progressing rapidly towards the same result."

Infinite credit is due to Mr. Butcher for the manner in which he has brought together, in a readily accessible compass, the details of the large series of cases, eighty-two in all, comprised in his tables; and the careful and conscientious discussion of those instances in which the operation either proved unsuccessful, requiring subsequent amputation, or ended in the death of the patient. He has been at infinite pains, in numerous cases, to procure the most authentic and reliable details by direct correspondence with the operating surgeon; and most interesting and valuable observations crowd his pages, as the communications addressed to him are herewith printed, from those who with himself constitute the great masters of modern

conservative surgery, including the names of Fergusson, Erichsen, Jones, &c. Mr. Butcher next ably argues the question of the comparative danger in amputation and excision, stating his strong belief, based on statistics, in the superior advantages of the latter operation; but he adds, and the advice is too valuable not to be given in his own words:—

"In my former essay I forcibly dwelt upon *the necessity of carefully selecting the cases for excision,* and pointed out the prominent features which should influence the surgeon; but I believe the caution has not been applied in every instance. I fear the panting after *éclat* has charmed away some from the stern dictates of judgment; yet I trust this may never be the case—infinite mischief is done by such rashness. Not only is the life of the patient jeopardised by an operation which cannot secure a useful limb, for the purposes of life, but the operation itself is brought into disrepute, and open to the sarcastic criticism of those who know but little about it."

Apropos of these observations, he takes in hand, and in severe but well merited terms refutes the strictures of Mr. Syme, who, with a spirit of opposition and hostility to the operation little becoming his justly high name and his great talents, has stated, in allusion to excision of the hip and knee-joints:—"Vehement and persevering efforts have lately been made to force into fashion two operations, which, while bloody and formidable, have the advantage of being so easy in execution that they may be accomplished by the most inexpert of operators—I mean excision of the knee-joint, and removal of the head of the thigh-bone, for disease of the hip-joint." As to these great operations being "easy in execution," all who have taken part in them can judge best; and that they are infinitely less "bloody" than many other operative procedures which have long had a well recognised place in surgery practical men can likewise testify.

A brief notice of Mr. Butcher's own cases, and his special mode of procedure, will fitly conclude our consideration of this important section of the work. Mr. Butcher records, in all, five successful cases operated by himself, a large proportion to have fallen to one hand, and exceeded only by Mr. Fergusson.

Nothing can be more complete or satisfactory than the general pathological and surgical history of the cases detailed. The description of the various steps of the operation are bold, vivid, and

impressive, and the details of after treatment all that could be desired by the surgical practitioner called upon to deal with this important operation under circumstances in which he is unable to command the assistance of experienced consultants. This part of the work is admirably illustrated by coloured and uncoloured lithographic plates, representing the cases before and after operation, and delineating, in the most complete manner, the state of parts in the portions of bone removed. One plate, of extreme value, is that which faces p. 168, and which represents the firmly-united bones, in a case which, so far as the operation is concerned, is entitled to be recorded as a most complete success, but in which the patient died in somewhat less than six months after resection had been performed. This, in other respects, regretable issue has been attended with at least one important result. It proves, to final demonstration, the complete success of the operation in substituting a firm bony union and a useful and strong limb for a state of things which no surgical patho- logist, after inspection of the extremities of the femur and tibia, as shown on plate X., facing p. 166, could consider to be otherwise remediable than by amputation with all its dangers and uncertainty. In this case union appears to have been complete in six weeks and one day after the operation; " the union was quite firm between the bones, the limb was solid and rigid, and the patient did not complain of the least pain during its elevation or depression." However greatly to be deplored in other regards, we doubt whether this case could have proved as much as it has done, and will do to all time, had the patient lived, as it has done by his death. We would suggest to our author the propriety and importance of having a longitudinal section made through both bones, and having a truthful delineation of both sur- faces of section lithographed for his next edition. This would leave nothing to be desired in the whole history of this most instructive and important case, and more especially if the exact nature of the osseous medium of union were determined by a careful microscopic examination.

But that we feel we have already drawn too largely on Mr. Butcher's pages in regard to this section of his work, we would to gladly reprint his valuable practical rules, which he reduces nine, and familiarizes in terse, pointed, and impressive language. As important aids to the operation and its after management we must not omit to mention the now well-known saw, and other cutting instruments, devised by Mr. Butcher, and of which an admirable lithograph and woodcut are furnished; nor again the

improved box-splint apparatus invented by the same ingenious mind.

That Irish surgery has a large and honoured part in the revival, and successful acceptance of an operation of such first class magnitude and importance is due to Mr. Butcher. All honour to his labours say we.

The sections which immediately follow deal with the important subjects of resection of the elbow and wrist-joints, and the conservative surgery of the hand. This portion of the work is fully handled and with great ability; but having drawn so freely from Mr. Butcher's writings on the greater, though not more interesting, question of excision of the knee-joint, we must refer the reader to the work itself for an account of the operation on the elbow-joint, and the main articulation of the wrist, &c. If we were to signalize any case specially, we might call attention to that illustrated by plate XX., p. 240, in which we are furnished with a *fac simile* of the patient's hand-writing after excision of the wrist. No more conclusive and satisfactory proof of the value and importance of a conservative operation could by any possibility be furnished by any case. Is it not lamentable to reflect how many cases must have been doomed to the permanent disfigurement and loss entailed by removal of the hand in the days when resection of joints was a thing lost in the night of time. Are any such cases still so sacrificed to error, ignorance, or prejudice? In regard to the operation he has himself devised for excision of the wrist Mr. Butcher must be allowed to speak in his own words:—

"The advantages which my new operation for excision of the wrist-joint and carpus posesses over every other one are thus expressed.

"The operation which I think best suited to these cases is the one which I put in practice myself; it meets every objection which has been urged against the measure, and to which I have already alluded. Mr. Stanley's operation is somewhat similar, but mine is superior, inasmuch as the tendons of the muscles of the thumb are not divided or disturbed from the soft tissues which surround them, and are thereby protected from sloughing and death; so that all the motions of the member in its integrity can be preserved. No doubt, after excision of the wrist-joint and carpus much motion cannot be expected; a firm fibro-ligamentous structure fills up the place of the removed bones, and fuses the surrounding textures into its dense tissue, and mats all together. But according to my view the hand may be retained nearly as useful as ever; the fingers being kept semiflexed, during the process of repair, they retain

their position, and the thumb being preserved perfect in its motions, readily approximates either of the fingers, so that the hand can be applied to its most delicate uses, such as writing, sewing, &c., as well as to the most severe and common-place, using implements for husbandry, grasping bodies, &c.

Since recording the above cases, I have on two occasions, according to my method, excised the wrist-joint in private practice, under the same satisfactory results."

Plate XX, with a lithograph of the joint operated on, and a *fac simile* of the patient's hand-writing, is the best comment on these observations, and the best testimony to the value of this operation.

Excision of the upper jaw is the subject next considered by Mr. Butcher. With a laudable spirit of research he runs rapidly over the early writers of this operation, from the first recorded case in 1693, by Akoluthus, of Breslau, through the cases and procedures of Planque, Desault, Garangeot, and Jourdain, to the scooping operation brought into prominence by the illustrious advocacy of Dupuytren in 1820. White's appears to have been the earliest case in which an operation nearly approaching that of total excision was practised. But to Mr. Lizars, of Edinburgh, our author gives the merit of being the first to propose *the entire removal* of the superior maxillary bone, with an account of the mode of procedure to be adopted. The distinction of actually removing the upper jaw in its totality must, however, be awarded to M. Gensoul, of the Hôtel Dieu, at Lyons, who, on the 26th May, 1827, excised the whole of the superior maxilla, together with the palate bone, for a fibro-cartilaginous tumour in a boy aged seventeen. In after days the names of Liston, Mott, Velpeau, Lisfranc, Fergusson, Cusack, O'Shaughnessy, and others must be mentioned with honour in connexion with this operation. To the cases of this formidable operation already recorded in the annals of surgery Mr. Butcher's experience adds no less than eight—three being instances of complete removal of the superior maxilla and palate bones, and five of more or less extensive excision of parts, in some instances *nearly all*, of the upper jaw-jone. After reviewing the various modes of procedure recommended by Lizars, Velpeau, Fergusson, and others Mr. Butcher lays it down :—

" The practical point deducible from the opinions and experience of these eminent surgeons is, that it is by no means necessary to adhere to any particular line of incisions ; a knowledge of anatomy—the shape of

the tumour—in short, the attendant circumstances of the case, will modify them, and determine their course and extent."

There are several points of practical importance to which especial attention is directed, at pages 260 and the following; but we should be open to the charge of plagiarizing Mr. Butcher's labours did we quote his admirable observations and practical instructions *verbatim.* Suffice it to say he is opposed to the ligature of the carotid as recommended by Lizars, dispenses with chloroform, and substitutes "well-formed cutting pliers and powerful scissors, if the operator possesses the required strength to use them," for the chisel and mallet. By an admirable procedure, which will be found fully detailed in the clinical history of the cases concerned, Mr. Butcher has, in certain instances, successfully effected the removal of large portions of the upper jaw, without division of the cheek or lip. This is important, more especially in the case of females; and the excellent result is well exemplified by the lithographic illustrations on plates XXVI. and XXVII. This section of the work is closed with a tribute to the originator of the operation, as Mr. Butcher regards him, couched in the following really eloquent, as they are likewise, generous terms:—

"I cannot close these observations, upon excision of the upper jaw, without paying a passing tribute of homage and praise to the great surgeon who originated the bold project, and who has been recently taken from amongst us, happily according to the course of time; not ruthlessly torn away, but gently removed in old age, while yet in full and vigorous possession of his faculties and mental acumen, covered with distinction and honour. The finger of science, throughout time, must ever point to the name of Lizars, as conspicuous amongst the pre-eminent of the Scottish school."

To the surgery of the lower jaw Mr. Butcher contributes six cases. One of (ultimately) complete excision, one of partial removal, and three of removal of cystic tumours without external incision of the cheek; and one of a large cystic growth, by a single linear incision parallel to and within the line of the horizontal ramus. To these may be added the results of two cases reported as successfully operated on in private by a similar single incision, making, in all, eight cases; no mean contribution, by a single hand, to the annals of the operations on the inferior maxilla. The pathology and surgical history of these cases, as graphically detailed, and, in several instances, well illustrated by our author, constitute a valuable

repertory for the practising surgeon to have at hand when about himself to undertake this important operation. Mr. Butcher's teachings are eminently practical in this as in all other instances, and from their impressive force and directness cannot fail to leave their record on the reader's mind. They are further, and this we regard as, perhaps, their pre-eminent value, fertile and suggestive, and will stimulate the mind of the young surgical practitioner to think and judge for himself in those emergencies ever recurring in varying shape, but never to be foretold or anticipated, and with which the mere routinist, or one that either teaches or learns upon system can never be competent to deal.

An interesting section follows devoted to the subject of the excision and removal of bones not connected with articulations. The first remarkable case here cited is that in which, after death of the shaft of the femur from fracture, and protrusion of one end of the dead bone with shocking deformity, extraction of six and a-half inches of the bone was effected, the limb was restored to nearly its full length, and consolidated by the application of "Butcher's splint." In a second case, of not less interest, the danger to the great vessels, from contact with a jagged portion of bone, was exemplified; and further to illustrate this important, and sometimes fatal, complication our author remarks:—"I may speak on the fears to be apprehended from injury to the popliteal artery, because I have been in the ward of the hospital when it gave way from the extension of ulceration in the parts around to its *own* coats." He cites a somewhat similar case from the experience of Professor Porter, and a remarkable case, which he himself witnessed, in the practice of Mr. Tagert, of fatal hemorrhage occurring in psoas abscess, from the roughened vertebra impinging on the cava, and producing ulceration and final perforation of its coats.

Other cases of great surgical and pathological interest, as bearing on the question of incision of joints for liberation of purulent collections, are incidentally introduced in this section. The first example is that of a patient in whom ligature of the popliteal artery was ultimately had recourse to in a case of disease of the knee-joint, with extension of unhealthy inflammation from the articulation to the vessel, producing sloughing of its coats and violent hemorrhage. Death ensued in eleven hours after the operation. The observations on the case are important:—

"On *post mortem* examination and careful inspection of the parts, the

joint was found opened up behind, with the results of ulceration destroying all in its track; not sparing the cartilages within, it seized upon the fibrous textures behind, and involved this artery in its destructive course, and thus the hemorrhage; the coats of the vessel had absolutely sloughed to the size of a pea; a portion of the circumference of this killed part was being dilated, and thus the rent created that yielded the alarming and fatal hemorrhage. It was now rendered manifest that amputation, at the time recommended and pressed for, was the only chance of safety. The entire joint was disorganized, its cartilages eaten away; gangrene of the tissues around. Excision of the joint would have been hopeless; amputation dexterously performed, even at this late time, might have saved the man.

"That the free incision into a joint, when suppuration is established within, is an admirable practice, *in many cases, I have no doubt,*" continues Mr. Butcher; "and though in the previous one it did not arrest the destructive mischief, yet I have seen enough of it to be convinced that it is an expedient most suitable, and to be extolled; it has its place—and so has excision, and so has amputation. On the judgment of the surgeon will rest the applicability of the one or the other."

In support of the views here expressed a very valuable and instructive case is detailed, of " Severe Wound of the Ankle-Joint, terminating in Suppuration within its Cavity, and Associated with Diffuse Inflammation, extending even as high as the Knee, treated Successfully by Free Incision." As the result of a violent twist to the foot in a youth, aged eighteen, very formidable inflammation ensued in the tibio-tarsal articulation, accompanied by " terrible " pain. Stupes, leeches, and the usual remedies having been employed without relief, and the joint being puffed out considerably, the articulation was laid freely open by an incision in front, and about a pint of pus was evacuated; three days subsequently matter was liberated by an incision in front of the tendo Achillis, this abscess being found to extend nearly as high as the knee-joint. A further abscess formed in the dorsum of the foot, and in our author's words:—

" The case appeared very unpromising, and amputation loomed in the distance; yet I persevered, and on the 30th the report states that he went on improving; all sinuses healed, abscesses shut up, and the discharge from the joint very trifling. Constitutional irritation allayed; he sleeps, and eats, and is getting fat.

"August 11th.—Wound in ankle-joint all healed up, as also the lengthened sinuses and abscesses throughout the limb; gentle motion of

the ankle-joint has been persevered in for the last few days, and it is astonishing how nearly it has been restored to its perfect functions."

After a period of somewhat more than four months the patient was discharged from hospital "able to walk upon the limb, without either halt or impediment," and after a lapse of more than two years he is reported, by Mr. Butcher, as "working at his trade without halt or impediment."

"Since the above date," continues our author, "I have frequently laid open joints where acute suppuration had taken place, saving both life and limb."

No more important subject can be offered to the contemplation of the practical surgeon than that of the liberation of purulent matter secreted into joints, whether as the result of an acute or chronic process of disease, or in the sequence of injury or violence; and we must confess to a disposition to cavil with Mr. Butcher, however reluctantly, for not giving us more in *extenso* the results of his experience on this subject. It is one which we would suggest will be well entitled to the distinction of a separate section, and more copious elucidation in a future, and we trust, early edition. With Mr. Butcher's experience, with his diagnostic intuition, and with his skill and boldness as an operator there is no one who could, with better prospect of success, grapple with this most difficult and complicated subject in surgical pathology, and with greater probability of defining a settled and established mode of procedure, where now all is doubt, difficulty, uncertainty, and, too often, delay, until mischief and destruction of parts, not always remediable by excision or amputation, are the consequence. We invite Mr. Butcher's especial attention to this branch of pathological and operative surgery, in which a great vacuum remains to be filled.

The remaining portions of this section comprise interesting observations on cases of excision of the minor bones, as for example—excision of the radius from one articular surface to the other, followed by recovery, with almost perfect motions and functions of the limb; excision of the metatarso-phalangeal articulation of the great toe, with recovery and perfect use of the foot; and lastly, excision of the metatarsal bone of the great toe, with recovery and perfect use of the foot; excision of part of one of the ribs having been performed in the same subject. These cases are detailed and commented on with Mr. Butcher's usual felicity and impressiveness of language.

To the important subject of wounds of the arterial system a section of some fifty pages in length is devoted, replete with instructive cases and most valuable practical observations. Mr. Butcher enforces the precept " of not searching by operation for the wounded artery, unless bleeding when the surgeon sees the case." In support of this dogma Case III., p. 371, may be referred to, in which wound of the ulnar artery, above the wrist, was successfully treated by compression at the wound, and pressure over the brachial artery. Case V., p. 375, is a still more striking example : it was that of terrible stabbing in the neck, implicating the carotid ; the mouth and face being extensively laid open ; with copious hemorrhage at the time of injury, and the subsequent formation of a tumour with heaving impulse in the situation of the wound crossing the carotid. The facial artery was secured immediately, and ice kept to the tumour in the neck, with relays of assistants for fourteen days and nights. " The tumour in the neck slowly increased up to the 12th November, when suddenly its pulsation ceased, and gradually it began and continued to diminish, until the 20th, when it remained as a hard elongated deposit, about the size and form of an almond." This case ultimately recovered, and as a practical example is a very valuable one, though it may be objected as non-proven that the wound in the neck necessarily implicated the carotid itself directly, which, from the evidence, we are of opinion ourselves it did.

" As warmly," continues Mr. Butcher, " as I advocate the practice, in certain cases, of ' not searching, by operation, for the wounded artery, unless bleeding is absolutely going on,' the more strenuously would I enforce the propriety of *at once cutting down upon the vessel, if of magnitude, and the bleeding going on.*" Cases VI. and VII., being respectively examples of wound of the gluteal artery and of the subscapular artery, are instanced as requiring immediate ligature, which was successfully performed. Case VIII. is an instance of very complicated injury, being one of extensively comminuted fracture of both bones of the forearm, with excessive hemorrhage into the limb from laceration of the posterior inter-osseous artery. These injuries were the result of the kick of a horse ; and the management of this case, which eventuated in complete recovery and perfect restoration of all the motions of the limb, reflect great credit on the surgeon. Malgaigne's mode of treatment for arresting hemorrhage, by powerful flexion of the injured limb, is spoken of very favourably—Mr. Butcher's own experience being that " it is particularly valuable, in conjunction with

gentle pressure on the main vessel of the limb, in cases where from a sloughing surface blood issues, and where no immediate compression can be employed." Case IX. is an example in point. It was an instance of excision of the index finger, together with the metacarpal bone, performed under the influence of chloroform, and in which profuse hemorrhage set in on reaction being established. Powerful flexion of the forearm on the arm was effected, the parts being kept so by tying them, while graduated pressure was employed over the radial and ulnar arteries, which controlled the bleeding, and recovery was the result. Some further and very interesting observations follow on wounds of the palmar arch and the vessels in the vicinity of the wrist-joint. The somewhat contradictory views of Liston, Miller, Fergusson, and Skey are discussed and commented on, and valuable rules of practice are laid down, based on the author's own experience, which in this branch of surgery has been considerable.

We cannot close our notice of the subject of ligature of arteries without some allusion to Mr. Butcher's heroic and eminently successful case of ligature of the femoral artery for the treatment of elephantiasis arabum. The full history of this case, with the measurements of the limb, will be found at p. 409; and it is further illustrated by a lithograph of the state of parts before operation. After a lapse of four years the patient is reported to continue in the enjoyment of excellent health, with the limb of natural proportions, and she is able to pursue her avocations as a laundress.

After notice of a case of extirpation of the eye-ball for true scirrhus, and the successful removal of an enormous fibro-cellular tumour of the arm, followed by perfect use of the limb in all its motions, the subject of operations at the ankle-joint is taken up. Mr. Butcher seems of opinion that Syme's operation "is not so applicable to the humble labourer and artizan as to the wealthy sufferer." In this view he concurs with the more matured experience of Mr. Fergusson, as detailed in the last edition of his work. On the whole, Mr. Butcher's decision is in favour of Pirogoff's operation, though he reports successful cases of Syme's operation in his own hands with very satisfactory results.

Amputation at the Knee is next considered. The names of Hoin, Velpeau, Syme, Markoe (of New York), Lane, and Fergusson are passed in review in connexion with this operation at the knee articulation. As is well known, it has been long a favourite procedure with some continental and American surgeons; but, though advocated by Syme and Fergusson, it cannot be said to have

received an established and fully recognized place in British surgery until after the Crimean war. It was extensively practised by the French surgeons during that campaign, and more especially in the casualties after the sanguinary battle of the Tchernaya. On that memorable occasion its applicability and excellent results were witnessed by Dr. Lyons, then filling the appointment of Pathologist-in-Chief to the British Army in the Crimea, and who assisted in the French field hospitals, as a volunteer, during the days subsequent to the battle of the Tchernaya. In the absence from camp of many surgeons, on sick leave, at the fall of Sebastopol, the gentleman just named did duty in the general hospital in the British camp, as a volunteer, and in several instances performed this operation amongst others. Attention was thus attracted to it, and much interest excited about it; and there can be no doubt that for a class of injuries involving the knee-joint, where the femur is either left free or but slightly injured, this mode of procedure offers great advantages over the only other alternative which remains, namely, amputation in the lower third of the thigh.

We are glad to find that Mr. Butcher has brought his powerful advocacy to the support of this valuable operation. In the only case which he reports it appears to have been eminently successful. In civil and in military practice important differences in the mode of procedure will be called for. The lesion which renders the operation necessary as an alternative for amputation will, in civil practice, be found but rarely, if ever, to leave the condyles of the femur quite free from all disease or suspicion of morbid action; whereas in military practice the Minniè or other projectile, which opens the articulation or destroys the head of the tibia, may leave quite free and untouched the cartilaginous surface of the femoral condyles; and, as operation is accomplished before secondary processes of disease could have time to invade the part, there is no need of the saw to remove a more or less considerable slice of the articular end of the bone.

In regard to cases in civil practice, except as the *immediate* result of peculiar injury by machinery or otherwise, as distinguished from the effects of morbid action, we can quite endorse Mr. Butcher's practice, as thus described :—

"The flaps being well held up before and behind, and the limb carefully steadied, *I laid the fine blade of my own saw on the healthy osseous tissue close to the cartilage, but not infringing upon it and then cut the bone in a curved*

manner from before backwards, thus securing a longer stump, more of the bone being free of cartilage, and exempt from sharp and irritating edges, better in every way for adaptation to the soft parts."

No practical surgeon can be insensible to the great value and importance of so valuable an instrument as " Butcher's saw;" it cuts with a fineness and precision that leaves nothing to be desired, and is so well balanced, and *works so true* to the last cut, that there is no danger of jagged edges or unnecessary disturbance of the periosteum.   All surgeons are familiar with that process of eliminative action so constantly set up at the cut extremity of the shaft of a long bone, by which, after a more or less protracted interval, a fine coronet-like ring of dead bone becomes separated.   During the process in question much irritation is continued in the stump, and no quick healing of the parts is to be expected or desired until the necrosed *coronet* is finally detached and extruded.   In hands the least skilful "Butcher's saw" will go far to obviate, if not altogether prevent such accidents.

An interesting case is next given in which a complicated amputation of the leg was performed, which well illustrates the resources and fertility of invention of the author, the flap having to be made in a very peculiar manner by a kind of plastic transplantation, and the popliteal artery requiring ligature.   In the sequel of the case pyemic symptoms made their appearance, but were successfully combated; and the case eventuated in a most serviceable stump.   A second example follows in which ligature of the popliteal became necessary in a case of amputation below the knee.

In the treatment of fractures of the thigh bone Mr. Butcher has introduced, and long employed with success, a modification of Liston's splint, which appears to be attended with great practical advantages.   A series of instructive cases, treated with this splint, is detailed in this section, which comprise almost every possible variety of fracture of the thigh bone.   They include fracture below the lesser trochanter; fracture partly within and partly without the capsule; fracture external to the capsule; fracture through the great trochanter; oblique fracture at the centre; oblique fracture below the centre; oblique fracture close to the knee-joint.   The first case affords an example of re-fracture thirty days after the original injury, in consequence of great deformity and five inches shortening, and in which an eminently successful result was obtained, with normal length of the limb.   Each of the other cases recorded

presents points of individual interest well elicited by judicious observation and critical comment. Mr. Butcher's experience leads him to differ with Sir A. Cooper as to the prominence of the superior fragment in fractures in the upper parts of the bone; and he cites, in confirmation of his own views and experience, details of five specimens preserved in the Museum of the Royal College of Surgeons in Ireland. He is then an uncompromising advocate for permanent extension in preference to, and to the entire exclusion of, the inclined plane, which he argues is incapable of fulfilling the indications of cure, and if persisted in is followed by deformity almost invariably. He ably combats Mr. Syme's objections to the employment of forcible and permanent extension. His own conclusion on the subject is summed up thus:—

" Of all methods of treatment that by the simple contrivance of Liston, modified, as I shall presently notice, is the most comfortable to the patient—preventing eversion, shortening, and deformity; and the mechanism is so applied that the trunk, pelvis, thigh, leg, and foot constitute one rigid body, which may be moved entire; but the component parts of which being immovable, *inter se*, preserve the same mutual relation. I have proved the advantages accruing from the appliance of this splint in every form of fracture to which the thigh bone is liable from without the capsule to the lowest part of the shaft. And, had I wished to transgress the bounds which I have marked out for myself in this work, I could easily have given cases where it proved of most essential service in steadying the parts in fracture of the cervix femoris occurring in old subjects; as also in soothing and allaying the spasms consequent upon ulceration in the cartilages of the knee and hip joints."

After quoting Mr. Liston's account of the long splint, the author thus describes his own modification of it:—

" The alteration is very simple, and consists in the addition of a piece of wood placed in a transverse direction beneath the lower end of the splint, and upon which its edge rests. The splint is steadied in this position by means of a long screw conveyed through a socket riveted vertically on the side of the splint. The upper end of the screw has fitted to it a brass handle placed across, while the lower end terminates in a cylinder, which is received into the centre of the piece of wood, and fastened in a hollow beneath by means of a nut and washer. The cylinder, as contrasted with the screw, is somewhat contracted, and presents at its commencement a shoulder which rests upon the steel plate on the upper surface of the transverse piece of wood, while the remainder

moves freely in the tube for its reception. From this it must follow that, by a few turns of the screw, the splint may be elevated or depressed at pleasure. Another advantage resulting from this mechanism is the facility with which the splint can be removed, the screw changed, and its adaptation to either limb effected."

A still further improvement has been effected by the substitution for the nut and washer, of a lateral screw, which passes through the transverse piece of wood, and so bears on the cylinder. Plate XXXVII. fully illustrates the improved apparatus.

At pages 516–20 will be found very full directions for the adjustment of the modified splint, which we are sure will prove acceptable to all practical surgeons not as yet familiar with the details of the apparatus as improved by Mr. Butcher.

Fracture in the vicinity of the ankle-joint is dealt with in the section which follows, and is illustrated by thirteen cases of varied complication and surgical interest. An improved box-splint apparatus is figured in Plate XXXVIII., and the entire of this section will repay perusal. The removal of spiculæ of bone in comminuted fracture is then considered. Under the heading " *Some Rare Injuries* of Joints, the Result *of Accident and Disease*," are included miscellaneous lesions in the neighbourhood of the large and small joints calling for operative interference, and this section comprises many cases of almost unique pathological and surgical interest. Mr. Butcher's experience adds another to the cases already recorded of dislocation of the humerus forwards and upwards; " *the amount of shortening, measured with the greatest accuracy, was more than half, and very nearly three quarters of an inch.*" The opinions of various writers are cited and commented on in connexion with this case, with notice of the example of the luxation as recorded by the late Sir P. Crampton.

A marked case of excretion of a blue colouring matter, analogous to Prussian blue, in connexion with compound comminuted fracture of both bones of the forearm, may be specified; as likewise an instance of dislocation of the cervical vertebræ without fracture. Plate XL. illustrates the condition of the bones as found on *post mortem* examination; but few examples of this lesion are on record.

To the treatment of hare-lip our author has devoted one of the largest and most elaborate sections of his work. It comprises nearly one hundred pages, and is profusely illustrated by cases, two uncoloured plates showing the state of parts as viewed on the base of

the skull, and very numerous coloured lithographs representing the diseased condition, before and after operation, in almost every possible variety, with woodcuts of instruments ingeniously devised to meet cases of unusual difficulty. This section constitutes, in fact, as nearly as can be, a complete and exhaustive treatise on hare-lip, its complications and the operations for its remedy, than which we can conceive nothing that should be more acceptable, as we are confident it will be, to those entering on practice for themselves in remote districts. As, however, from its very extent we could not do justice to this important subject without passing the limits assigned to us, we recommend its attentive perusal to all concerned in an operation so frequently called for, and the results of which have such an important bearing on the appearance, social comfort, and other interests of the patient for the remainder of life

A table on page 718 gives the results of seventeen cases of complicated hare-lip, showing the age when operated on, the sex of the little patients, and the time when the needles were removed. Finally, it may be noted that Mr. Butcher is opposed to the administration of chloroform in this operation.

Lithotomy in the infant and the child receives abundant illustration in the next section. Our author clears the ground by an able tabular summary exhibiting, in contrast, the axis of the pelvis in the adult, the child, and in old age, and the conditions of the rectum, and those of the bladder also, at the like periods of life. Seven cases are recorded in which the age varied from one year and four months to nine years. Practical directions are given for each step of procedure, from that of sounding, in the first instance, to the final removal of the stone. In this last operation our author recommends *the introduction of the forceps on the blunt gorget*, a procedure not followed by others, who appear to prefer the introduction of the finger as a guide to the forceps. But, if we bear in mind the smaller relative size of all parts in the child, it will be at once seen that as the forceps and gorget, which adapt themselves to each other, must occupy much less space than the finger and forceps, Mr. Butcher's practice has much to recommend it in the child. It is of the utmost consequence, to avoid over-distention and possible tearing of the parts; and, with a suitably constructed gorget, the forceps can undoubtedly be more readily passed into the bladder than when the already small passage is partially blocked by the operator's finger. Woodcuts of the staffs and knives employed,

of the gorget and forceps, and of the *canule à chemise* are furnished with this section.

The disfigurements and deformities which result from burns are a constant subject of reproach and regret to the surgeon after all the labour he has expended in bringing a tedious case through the many and aggravated dangers which beset the patient injured extensively by fire or scald. "Death escaped," as our author well observes, "life may be rendered very miserable by the deformity and impairment of function often inseparable from the healing of a burn." Scarce a wayside in Ireland but offers, daily, examples of deformities, the results of burns, hideous to behold.

The case represented on Plate LIII., before and after operation, is an excellent example of the deformity in question, and of the successful results of an operation for its removal planned and executed by Mr. Butcher. The head was dragged and bound down towards the left shoulder as far as the cervical vertebræ would permit; and, on the other hand, the shoulder was elevated considerably, "the cicatricial tissue, active in all this displacement, filling up the angle between the shoulder and head, was most extensive and massive, attached above and expanded on the mastoid process of the temporal bone, and far behind for two-thirds of the transverse extent of the occipital bone."·

By an operative procedure having for its object to detach and cut up and unfold the cicatricial tissue (but which must be read in detail to be fully understood), with careful dressing, extended altogether over a period of seven months, a most satisfactory result was obtained in this at first very unpromising case. In another case of severe scald, producing great contraction and deformity in the lower extremity, very great improvement was accomplished by a procedure somewhat similar to the above, combined with removal of part of the affected limb.

In a succeeding section the treatment of *cancer* and *cancerous* warts, by operation, is detailed with several interesting cases. Several lithographic plates illustrate this portion of the work, comprising delineations of the microscopic appearances in some of the cases recorded.

In the radical cure of hydrocele, by injections, Mr. Butcher's experience adds many cases of interest to those already recorded on the subject. This section is very fully considered, and as an aid to the diagnosis of hydrocele the statement in parallel columns, at p. 836, of the symptoms of this affection and of those maladies which

may be confounded with it, will aid the junior practitioner materially in acquiring habits of careful discrimination, and in the cultivation of his diagnostic powers.

Cases of traumatic tetanus, treated by different methods, find a place at page 838. Our author's treatment may be said to be eclectic; he has employed, with varying success, indian hemp, chloroform, and belladonna, with operative interference, by amputation of the lacerated parts, in at least one case, with assiduous application of ice to the spine. In all crushings and lacerations by machinery early removal of the parts, when admissible, is enforced, and careful cross-section of the principal nerves is recommended when such removal of parts is not permissible.

A case of aneurism of the subclavian artery on the right side, ligatured in the first stage, in which death followed four days after the operation, is next detailed at some length, and with many practical observations.

Two records of operations for tumours of unusual size fitly close the work. In the first an enormous fibrous growth was removed from the neck; its weight was found to be five pounds and two ounces; death ensued on the ninth day from pyemia. In the second case a fibrous tumour of the breast, weighing thirteen pounds and a-half, was successfully removed in a woman, aged forty-four years. Plate XLII. exhibits the tumour as seen prior to operation. "This case," says our author, " presents, in its details, many points of interest; the magnitude of the growth; its persistent and rapid enlargement; its nodulated and stony hardness; its wide-spread partitions; its deep massive trabeculæ; its large vascular supply; its inordinate venous return through enormously distended channels; the peculiar mode of dealing with these veins, by passing silver cords beneath and occluding them temporarily, with the double object—first, of preventing the sudden loss of blood, which would be immense from vessels so enlarged and engorged; and secondly, by preventing the return of air through tubes so patent, patulous, and direct to the heart." For this mode of procedure Mr. Butcher claims priority.

We rise from the perusal of this work with the heartfelt conviction that it is the labour of one filling a high and useful place in his time and his generation—bold to conceive, ready and able to act, deserving the confidence of his fellows, willing to lead where others are content to follow. The man and the book are for ever a name and a household word where Irish surgery is spoken of.

The Successful Treatment of Internal Aneurism. Illustrated by Cases in Hospital and Private Practice. By JOLLIFFE TUFNELL, F.R.C.S.I., M.R.I.A. London: Churchill and Co. Dublin: Fannin and Co.

THE Irish school of surgery have contributed so much to the alleviation of the sufferings of those who labour under external aneurism that a proposal by one of its members for the treatment of the internal form of the disease, demands careful consideration and a fair trial. When this proposal comes from one who has already distinguished himself in connexion with the treatment of external aneurism—who was the colleague of the late Dr. Bellingham in many of his labours—who states that they together determined on a plan of treatment which they considered the most likely to bring about the cure of this disease—that since Dr. Bellingham's decease he has continued steadily to carry out the practice, and with a degree of success such as he believes he may safely say has been unprecedented under any mode previously adopted, the demand for its trial becomes imperative. We propose, then, to lay before our readers a short abstract of the work in which Mr. Tufnell describes his method of treatment, and to leave it to them to submit it to the severest form of criticism, that which the author courts, practical experiment: a test that may fairly be tried, for no aggravation of the symptoms, no injury or risk of life can by possibility be produced in so doing.

The method of treatment is a modification of Valsalva's, the object being the production, artificially, of consolidation, nature's cure, which in isolated cases has from time to time occurred; and Mr. Tufnell carefully guards himself from being supposed to state that this can be done in all cases, but he asserts that in very many cases now considered hopeless, such a state can be brought about by the means he details. Before entering on the description of his mode of treatment, Mr. Tufnell relates six cases, one of which we quote:—

" The third instance that I shall adduce is that of a die-cutter, named Parks, the subject of the illustration of this paper, a delicate looking man, aged 54, who was admitted into the City of Dublin Hospital on the 18th of September, 1854, with thoracic aneurism, the tumour being three inches in diameter, and considerably elevated above the surrounding skin. It was situated to the right side of the sternum, between the second and fifth ribs, and occupied the sites of the third and fourth,

which, together with a portion of the sternum had been absorbed. He stated that he had always been temperate and steady, but had worked very hard at his trade, that of die-cutting in steel. For some time back he had experienced a sense of heaviness in his chest; but about five weeks prior to admission, he, one night, upon taking a pill for constipation, let it pass into the trachea. He was seized with intense coughing, which lasted for an hour, and under which he fell exhausted. A few days afterwards he felt severe pain in the breast, shortly followed by the tumour. At the time of admission he was exhibiting considerable cardiac distress.

" He had tried to work on at his trade, but the pain was so excessive that he was obliged to relinquish it, and come into hospital for relief. His pulse was 88, full and regular, and equal at either wrist. The fingers when laid upon the tumour at its most projecting point, pressed against a soft cushiony, elastic, pulsating surface, giving to the touch the sensation of the integument only intervening between the observer and the blood contained in the sac. There was a double pulsation sound when the ear was laid upon the tumour, but neither *bruit de soufflet* nor murmur of any kind. The aneurism evidently sprung from the anterior aspect of the right side of the ascending portion of the arch of the aorta, and was approaching rapidly towards the surface, absorbing all before it in its progress. The nature of the case was explained to him, and the treatment hereafter to be recommended was commenced upon the 19th of September, and continued steadily until the middle of November. At first he felt the loss of food considerably, and used to look anxiously at the other patients eating their meals, but he had the sense to restrain his appetite, and took nothing whatever but the regimen allowed. He suffered more from thirst than hunger, and complained a good deal of dryness of the throat and fauces at night, which, however, was somewhat relieved by keeping a pebble in his mouth. These annoyances soon became less and less, and upon the 25th of September the pulse had become reduced to 70, and was soft, whilst the pulsation and pain in the tumour had greatly diminished. Upon the night of the 26th, however, an untoward circumstance occurred, another patient, in a fit of maniacal delirium having rushed into the ward, and made for his bed, producing intense agitation and alarm. Port wine and opium were given to him, and confidence after a while was restored; but his heart's action became tumultuous, and remained so for some time, not regaining its steadiness of beat until the 28th. Ice was at the commencement applied to the tumour, but after a little while a thin piece of linen rag moistened with water was kept on as an evaporating medium instead. The tumour now began to be less prominent, and was described by the patient as feeling more condensed. The double thump gradually disappeared in the tumour, and a single beat only could be felt, corresponding to the natural sound of the heart, but slightly louder.

"Upon the 2nd of October the pulse had fallen to 62. He could now lie flat upon his back for two hours at a time, which he could not upon first admission, being then obliged to rest more or less propped up. The tumour gradually became firmer and firmer, and flattened in the centre. Towards the middle of November his general health was excellent, and his bulk and weight had but very little declined. His diet was now slightly increased. He left the hospital upon the 13th of December for his home, where he promised to remain at rest for some time.

"I did not see this patient again until December, 1857, when he called upon me to request my advice for an irritable ulcer of the leg. Upon questioning him, he said 'that the aneurism never troubled him now,' that he was quite well as regarded it, and had been regularly working at his trade as a die-cutter and steel engraver since March, 1855. When stripped, the first point that attracted notice was the enlargement and tortuous condition of the abdominal and pectoral cutaneous veins; the epigastric, circumflex, and mammary having assumed the condition of large venous trunks, as illustrated in the portrait annexed, which has been reduced from a drawing of life-size taken by Mr. Connolly of Dublin. The tumour next engaged my attention. It projected to the right of the sternum, nearly midway between the clavicle and nipple, where it presented a bulging prominence the size of a small saucer, making this side contrast strongly with the hollow intercostal spaces and marked ribs upon the left. No pulsation was visible in the tumour, even when any testing object, such as a portion of white paper was placed upon it. To the hand it felt dense, and the cardiac impulse against the interior of the sac was unheeded by the patient. The sound on percussion was dull over a very large space around the heart, whilst to the ear a double sound was given, intermediate in time to the contractions of the heart. Upon deep inspiration this portion of the chest did not expand. The heart's sounds were audible over a very large portion of the chest, and the pulsation, aneurismal and cardiac, was communicated to the hand or ear for a space of fourteen inches in an oblique line from the right clavicle down to the left hypogastric region. His general appearance indicated a barrier to the return of blood to the right side of the heart. There was some congestion of the face, which was increased on stooping, with puffiness of the neck to a slight degree. There was no interference by pressure upon the trachea, nor œsophagus. He had some slight cough and expectoration, and occasionally after coughing felt pain in the tumour, but not at any other time. There was no interference with either the carotid or radial pulses, and the circulation was equal upon both sides. He stated that he lay at night upon the right side to sleep, and could not upon the other. He had been regularly working at his trade, and one of his most recent acts had been the cutting of a new seal for the College of Surgeons in Ireland; and it is a point of interest in

connexion with this case to consider, that from his hand the die has issued which now stamps the diploma of the Dublin College of Surgeons."

Mr. Tufnell devotes a section of his book to an account of the symptoms, and a critical examination of each, as to its value in a diagnostic point of view, and then describes the plan of treatment, which is to be carried out by means of rest, regimen, and remedial agents. He objects to the repeated bleedings and starvation of Valsalva; on the contrary, he says:—

"We require the health of the individual to be as perfect as possible, and the blood in a highly fibrinised state, for it is from the fibrine of the blood we are to draw the material of repair. Our object is by every possible means to reduce the watery elements, and increase the solid constituents of the blood. We require to diminish the heart's action in volume, but we also need to have its frequency reduced. The quantity of blood in the system must be lessened and the force of the circulation reduced; but this must be effected through cutting off the supply of fluid and acting upon the exhalents of the skin, the kidneys, and the bowels, and not by taking blood from the arm. We desire to diminish the heart's action in the first place, in order to prevent enlargement of the aneurism; in the second place with a view that the sac (acting under the law of all comparatively empty cavities, to collapse) shall correspondingly contract; and in the third, that the current of blood being reduced to a wave-like form, shall, by continued deposition, first line the cavity, and ultimately fill it up altogether. Fibrinisation is to be effected by maintaining the quality of the blood, and preserving the patient's health; bleeding impoverishes the blood by removing the very source from which we seek the cure, whilst frequent venesection accelerates the action of the heart. For these reasons Valsalva's propositions are ill-conceived. Every object sought for will be attained by the recumbent position, and restricted diet; and bleeding, as suggested by Valsalva, should be utterly eschewed. It may be employed as detailed in Captain ——'s case.

"The recumbent position is the main point to be attended to. If this connot be maintained for a considerable length of time, all other treatment will fail. In the horizontal posture the circulation is tranquilized, and the heart's action becomes regular and slow. Recumbence places that check upon the circulation in internal aneurism, which, in external, can be mechanically produced. How, it may be asked, is this effected? Reference to the last case detailed will explain. This patient, upon admission, had a quick, full, and jerking pulse, beating 104 times per minute. After a few days it fell to 96, but, when standing and in ordinary exercise, it never reduced below. Placed lying horizontally,

however, for thirty or forty minutes the pulse fell to 66. Now, working this out arithmetically, we find the result to be as follows :—

" The pulse when standing and in ordinary exercise   96 per minute.

" The pulse after lying horizontally for a while   ...   66   ,,

" Difference of pulse caused by position   ...   ...   30 beats per minute.

" Multiplying 30 beats by 60 minutes   60
                                                   30

                   " Gives   ...   1,800 beats per hour.

" And Multiplying 1,800 beats by 24   24

                                                   7,200
                                                   3,600

                   " Gives no less than   ...   ... 43,200 beats per diem.

" The aneurismal sac being in the one instance (irrespectively of the force of the contractions) filled by the heart in the twenty-four hours, no less than forty-three thousand two hundred times oftener than in the other ; or, granting that under ordinary circumstances, the individual affected should rest in bed for twelve hours out of the twenty-four (which we know to be greatly in excess of any ordinary recumbence), it would realize twenty-one thousand six hundred times per day. What remedial agent in the pharmacopœia will, without prejudice to the constitution of the patient, produce this result? The answer is brief: there is none. Recumbence is the secret of cure, but this recumbence must be regularly and steadily maintained. I have mentioned 'a considerable length of time.' I mean by this expression two months or ten weeks, at least, and this period to be passed without the patient, if possible, sitting even once erect. In carrying out the treatment we require therefore a light, cheerful, and airy room, where by day the patient shall have an opportunity of seeing what is going on ; and especial care must be taken that it has a southern aspect: for nothing is more depressing to the spirits of a patient than being immured in a chamber upon which the sun never shines. The next point to be attended to is the bed, It must be of camp form, so that the bowels when acting can be easily relieved by an assistant with the pan, or (if not acting) by the administration of an enema, without disturbing the patient. Yet it must not be too narrow, as the sufferer would otherwise feel cramped and confined, and not sufficiently at ease. Upon the bedstead must be placed two hair mattrasses, one upon the other, both full and elastic. Upon these (in proper site to receive the sacrum and hips) a large water cushion properly but not over filled. Upon this a double blanket sown at the corners and

sides to the lower mattrass, and upon the blanket a fine linen sheet similarly attached, this being done to prevent all wrinkling in the bed and disturbance of the sheet on which the patient's legs and body lie; another linen sheet (folded as after a lithotomy operation) being laid transversely to receive the buttocks, and be drawn from beneath from time to time. Three or four good feather pillows to prop the shoulders and receive the head, together with the over clothes, complete the bed, on which, when once comfortably settled, the individual must be content to lie without changing his position further than to turn from side to side, or occasionally round upon his face, should such movement give relief to the dorsal pain, as it sometimes will. A urinal and bedpan must be at hand, and an attendant always ready to offer such aid as the patient may require; to read to, converse with, or amuse him. The diet, under ordinary circumstances, must be confined to three meals, served at regular intervals, and restricted to the following in kind and in amount, viz.:—For breakfast, two ounces of white bread and butter, with two ounces of cocoa or milk. For dinner, three ounces of broiled or boiled meat, with three ounces of potatoes or bread, and four ounces of water or light claret. For supper, two ounces of bread and butter, and two ounces of milk or tea, making in the aggregate ten ounces of solid and eight ounces of fluid food in the twenty-four hours, *and no more.* Thirst, if present, (as at first it most probably will be, especially during the summer months) must be met by holding a pebble in the mouth to favour the secretion of saliva, or if procurable, by sucking from time to time a small portion of ice, this diminished quantity of liquid reducing the duty of the heart, and relieving the action of the lungs; the effect upon the blood being at the same time to render it thicker and more fitted for deposit. Nature is thus placed in the most favourable position to work out a cure, and we may in some few cases leave her to perform it without further aid. Such, however, is the exception. Hence, therefore, it is necessary to offer a few remarks upon those remedial agents from whose employment we may derive assistance during the progress of treatment, for in the majority of cases it will be found that recourse must be had to anodynes, aperients, and tonics, given internally, or used as external applications.

In addition to perfect rest and proper diet, the use of anodynes and sedatives is beneficial. Mr. Tufnell speaks very highly of lactucarium, and gives it either by itself or in combination with lupuline or hyosciamus. For aperients he gives compound colocynth or rhubarb and aloetic pill; or, what he thinks best of all, compound powder of jalap, which not only removes feculent accumulation, but reduces the quantity of the blood by withdrawing serum.

It must be regarded as a great triumph for medicine if aneurism of the aorta be made amenable to treatment. We trust the expectations to which this book gives rise may be fulfilled, and that either by the plan therein recommended; or by direct pressure of the aorta above the aneurism, while the patient is under chloroform, as has been tried with success in Newcastle; or the combination of pressure above and below the sac, as suggested by Mr. O'Ferrall, and recently tried, also under chloroform, with such eminent success by Dr. Mapother, of this city, in St. Vincent's Hospital; or by a due combination of all three methods, death will be deprived of one more of his arrows by our glorious art.

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1. *The Practical and Descriptive Anatomy of the Human Body.* By Thomas H. Ledwich, F.R.C.S.I., and Ed. Ledwich, F.R.C.S.I., Lecturers on Human and Comparative Anatomy in the Original (now the Ledwich) School of Medicine, Peterstreet, Dublin. Second Edition, Revised and Enlarged by Ed. Ledwich, Surgeon to Mercer's Hospital. Dublin: Fannin and Co. 1864. Fcap., pp. 779.

2. *Illustrations of the Surgery of the Female Pelvic Organs. In a Series of Plates taken from Nature. With Physiological and Pathological Observations.* By H. Savage, M.D., F.R.C.S.; Physician to the Samaritan Hospital for Women. London: Churchill. 1863.

We associate these works because they are both treatises on anatomy—that of Dr. Savage being, notwithstanding its title, really a series of plates illustrating the anatomy of the organs of generation in the female. *The Practical and Descriptive Anatomy of the Human Body*, by the Messrs. Ledwich, is so well known, and so fully established as a standard work, that it is only necessary to announce the appearance of a second edition, edited, revised, and enlarged by Mr. Ed. Ledwich. Alas! that he alone should remain to us to execute the task. The plan of the former edition is retained; the descriptions are concise, lucid, and full; the student, instead of being referred to plates, is urged to apply himself to dissections as the only method of studying anatomy; and certainly no more excellent guide could be desired in such a mode of study than that provided for him by the Messrs. Ledwich.

Dr. Savage's *Illustrations of the Surgery of the Female Pelvic Organs* is, as we have already said, a series of plates on the anatomy of the internal and external organs of generation in the female. The first eight are drawn from dissections made by Mr. James Traer, whose reputation as a skilful anatomist has been well established by his communications to the Anatomical Society of Paris. Plate XI. is a diagram, in which the proportions are carefully preserved. Figures 1 and 2, Plate VIII., are copies of illustrations from preparations by M. Hirschfelt; with these exceptions all are taken from original dissections. The drawings, which were made by M. Léveillé, have been printed by Lemercier, and, both in colouring and execution, are most admirably done. We commend this work most strongly to all who are engaged in the practice of midwifery or the treatment of the diseases peculiar to women.

Acupressure—a New Method of Arresting Surgical Hemorrhage, and of Accelerating the Healing of Wounds. By James Y. Simpson. With Illustrations. Edinburgh: Adam and Charles Black. 1864. 8vo., pp. 580.

Perhaps no topic is more congenial to a small mind to dilate upon than the assumed degeneracy of modern as contrasted with ancient times, whether the subject dwelt upon be literature, art, or science. How frequently in every walk of life do we not meet with people who, however feeble in other respects, wax eloquent when they come to contrast men of the present day with those of a by-gone generation. If the subject of conversation be the church, the senate, the bar, the medical profession, the stage, we, according to them, have now-a-days no such divines, orators, statesmen, physicians, surgeons, or artists as flourished in days gone by; and yet it seems to us that the philosophical student of medicine in future generations will be compelled to admit that so far as our profession is concerned, it, at all events, is not obnoxious to such a charge; and probably in every other department the vindication of the present generation might be as complete as that of the medical profession; but, be that as it may, we think that we can, with truth, assert that in no other equal portion of the world's history has medical and surgical science advanced with such rapid strides as it has within the past quarter of a century, and that not only in our own special provinces, but also in those sciences which,

having only an indirect connexion with our profession, still have an intimate relation to one of its important branches—chemistry. Witness electric telegraphy and photography. Within the past quarter of a century surgery has made advances of a giant character. Operations formerly never dreamt of are now performed with a boldness and comparative safety that almost command our awe. Excisions of diseased masses, involving structures hitherto considered unassailable by the knife, such as of the entire scapula, of the tongue, of the upper jaw, of ovarian cysts, are, if not of every day occurrence, so frequently and so successfully performed that they claim position in our text books as recognized surgical operations. Operations for vesico-vaginal fistulæ have been put upon a firm basis, and many a sufferer has been thereby restored to a condition, not of comparative, but of absolute comfort. In medicine the diagnosis of obscure diseases has been determined almost with mathematical precision, and the practitioner no longer gropes in the dark when treating symptoms which formerly he could not estimate at their proper value; but which now, thanks to the labours of a Bright, an Addison, a Corrigan or a Stokes, he can, with certainty, refer to their proper source. The treatment of urethral strictures has been expedited and simplified by the introduction of the " immediate plan." The treatment of burns and of cutaneous affections has been marvellously improved by the introduction into use of the continuous warm bath. Aneurisms have been robbed of half their horrors by the treatment by compression. The histology and pathology of diseases of the larynx and of the nasal fossæ have been elucidated by the laryngoscope and rhinoscope. Those of deeper seated organs seem to be in a fair way of being studied with equal precision by the endoscope; and, as it were, to crown all, every kind of operative interference has been robbed of much of its danger and most of its horrors by the introduction of anesthetics. Such, we venture to submit as (although of necessity, indeed, a very incomplete, still, incomplete though it be, and were it all) a most triumphant vindication of the progress made during the past quarter of a century in the advancement of every branch of our noble profession, by some one or other of its members, most of whom, we are happy to add, are still alive, and still exerting themselves on behalf of suffering humanity.

Prominent on the roll of those good and faithful servants to whom was entrusted a talent, and who certainly could not be accused of having buried it, must always appear the name of James

Y. Simpson, the distinguished Professor of Midwifery in the University of Edinburgh, and that even though he had only borne the share he unquestionably has in the preceding enumeration of the work done in the past quarter of a century. Having attained the highest position in his profession, enjoying a more lucrative and extensive practice than has fallen to the lot of many, already of high professional and literary reputation, on the first hint of the induction of anesthesia by sulphuric ether, in a true Baconian spirit, he plunged into its investigation and study, with the apparent determination, on the one hand, to expose it if a folly, as boldly as he has done the fashionable tenets of homeopathy; and on the other hand, if based on truth, to adopt it as one of the greatest boons conferred in this or any other age on suffering humanity. He quickly appreciated its great advantages and detected its drawbacks, and profoundly impressed with the truth of anesthesia, he, in the midst of his extensive professional engagements, set himself to work with the enthusiasm of a student, corrected and held in restraint by the sagacity and caution of the experienced and accomplished physician, to discover a substitute for sulphuric ether, a substitute that whilst it possessed all its virtues would be free from its defects, and as the result of his extended experiments, experiments necessarily of a hazardous character, and in which his own person was not held sacred, announced to his professional brethren the anesthetic properties of chloroform—properties how appreciated by the profession may be best estimated from the fact that in one establishment alone 4,000 doses of it are manufactured daily. As the earliest, most energetic, and consistent supporter of anesthesia, and as the discoverer of chloroform as an anesthetic agent, the name of Professor Simpson should have gone down to a grateful posterity, as one who had placed his fellow man under important obligations to him; how and to what extent, by his recent labours recorded in the work before us, he has enhanced these obligations, it is now our duty to inquire.

To the student looking over the historical records of our profession no subject can present greater or yet more painful interest than the methods adopted in the older times for the arrest of hemorrhage after surgical operations. To a person possessed of a vivid imagination and of a humane disposition nothing can be more harrowing than the calm way in which is described the employment of a knife heated to redness, with which to make the incisions and at the same time staunch the bleeding. In spite of

ourselves we can not avoid reproducing in our imagination the heart-rending screams of the patient, struggling fiercely but ineffectually, for he is firmly bound, and anesthetic agents are unknown; the hissing of the poor creature's flesh as the glowing knife traverses it, the sickening odour that arises from the cauterized tissues; and at last the screams becoming hoarser, as they issue from a throat parched with agony, and weaker as they are emitted from a frame exhausted by physical suffering and the unavoidable loss of blood; the subsequent application of the red hot cauteries—more screaming, more hissing, more odours; and, as if that were not sufficient, agony is piled upon agony by the occasional additional application of boiling oils, boiling turpentine, melted lead, melted sulphur, &c., according as the individual predilections of the operator prompted. Whilst the subsequent dressing of the stump of such of those as survived the operation bring up equally painful associations; the grim list of digestives employed being not one whit more merciful. " Oyle of elders, boiling hot," being that most in vogue during Ambrose Paré's earlier experiences; and how deeply imbued his mind must have been with their importance the following extracts from Professor Simpson's work will show us:—

" Paré ingenuously relates how, by a happy chance, his eyes were opened to the gross and cruel character of this established treatment; and the tale is one full of therapeutical instruction even to us. In the year 1536 he accompanied the French army, under the High Constable Montmorency, to the north of Italy; and at the siege of the castle of Villane there were many wounded on both sides, chiefly with bullets. At their first dressing, these cases were treated by all the surgeons of the army on Vigo's plan, namely, by filling as full as they could the wounds made by gunshot with tents and pledgets dipped in the scalding oil of elders. But 'it chanced on a time,' says Paré, 'that by reason of the multitude that were hurt, I wanted this oyle. Now, because there were some few left to be dressed, I was forced, that I might seeme to want nothing, and that I might not leave them undressed, to apply a digestive made of the yolke of an egge, oyle of roses, and turpentine. I could not sleepe all that night, for I was troubled in minde, and the dressing of the precedent day (which I judged unfit) troubled my thoughts; and I feared that the next day I should finde them dead, or at the point of death, by the poyson of the wound, whom I had not dressed with the scalding oyle. Therefore I rose early in the morning, I visited my patients, and, beyound expectation, I found such as I had dressed with

a digestive (or ointment) onely free from vehemencie of paine, to have had good rest, and that their wounds were not inflamed nor tumifyed; but, on the contrary, the others that were burnt with the scalding oyle were feaverish, tormented with much paine, and the parts about their wounds were swolne. When I had many times tryed this in divers others, I thought thus much,' adds Paré, 'that neither I nor any other should ever cauterize any wounded with gunshot.' "

Ambrose Paré's suggestion of the use of the ligature appeared in the year 1564; and, looking upon it not so much by the light of modern times, as contrasting it with the horrible methods up to that time in vogue for the arrest of hemorrhage, were not history in direct antagonism we could scarcely bring our minds to credit that it was not, at all events, and that promptly, subjected to fair trial; but that such was not the case contemporaneous and subsequent medical literature amply proves. At first, stoutly opposed, it only crept slowly into general use—so slowly, indeed, that fully two hundred years subsequent to Ambrose Paré's publication (in 1761) we find a distinguished surgeon, Mr. Sharp, complaining of its not being universally accepted even in enlightened England. We can with difficulty bring ourselves to credit that probably many people are still alive in these islands in whose infancy this barbarous, cruel surgery was still an existing fact, but that such is sad truth history leaves us no reason for doubting. Questions and studies such as these are of more than historic interest; they teach us, if properly applied, a great lesson. Whilst inculcating, by the ultimate triumph of the ligature, the truth of the maxim, " Magna est veritas et prævalebit," still they must give rise to great regret that doctrines which are founded on truth should require two hundred years of human agony and the sacrifice of lives innumerable for their acceptance. Whilst deploring this fact we still must not be understood as underrating the great value and importance of a moderate scepticism. No greater misfortune could befall medicine as a science than the hasty, inconsiderate, and universal adoption of innovations, no matter how eminent the station or brilliant the genius from which they emanate. And even unreasonableness in requiring proof and slowness in being convinced are, to some extent, attended with their own peculiar advantages—always provided they do not verge into the opposite extreme, and entail on us as deplorable a delay as formerly attended the introduction of the ligature. Perhaps Pope's lines most correctly point out what should be our conduct under such circumstances:—

"Be not the first by whom the new is tried,
Nor yet the last to lay the old aside."

Great as have been the benefits conferred upon surgery by the introduction of the ligature, it has long been a source of serious concern to the really scientific surgeon, the great amount of mortality even still attending upon capital operations, and especially so upon amputations. Some surgeons, for many accidental reasons, have been more fortunate in their operations than others; but, taking together a large number of amputations of the extremities, it has been sufficiently established that the mortality per centage is in round numbers about one in three. Such a fact establishes beyond cavil that there must be something wrong in our present mode of procedure, and that there is still great room for improvement in this department of surgery. Professor Simpson's views on this point are put so whimsically, but withal so aptly, that we must quote the passage:—

"Some time ago, when asked by an excellent provincial surgeon how his leading metropolitan brethren and former teachers were treating their surgical wounds, I answered, that they were placing some minute morsels of dead flesh into the raw cavities or upon the raw sides of all their large wounds. My questioner looked greatly amazed—expressed his astonishment at such ideas being countenanced and adopted in high quarters—maintained rather stoutly that the practice must prevent primary union, and must be apt to give rise to pyæmia ; and it was altogether, he seemed inclined to argue, a grievous and a lamentable retrogression in the principles and practice of sound and scientific surgery.

"Indeed, if after the amputation of a limb or the removal of a tumour, any British surgeon at the present day were—ere he closed the wound—to avow it as his professed and predetermined intention to insert deliberately and carefully into the sides and depths of that wound a number of very small pieces of dead, sloughing flesh, taken from another diseased or dead human body ; and, further, if he fixed or stitched these fragments of mortified flesh into the raw walls of the wound by a series of silken threads, and retained them there for a week or two—would the practice not be considered as most objectionable in its character, and altogether discreditable to the advanced state of modern surgical science ? But if, in addition, the surgeon who treated the wounds of his patients in this manner—inserting into their sides minute masses of sloughing flesh, with seton-threads attached to them—were further to maintain that he expected that the wounds treated in this strange manner would unite by the first intention, would not his powers of judgment and reasoning be liable to be gravely doubted and denounced ?

" Yet in reality all this—as we have seen in the last two chapters—is virtually and truly the practice and principle followed at the present hour by surgeons, when they staunch the hæmorrhages which follow the use of their knife by tying silken ligatures around the drawn out and isolated ends of the bleeding arteries. For thus, in every wound, they (1.) artificially produce and make as many small masses of strangulated, dead, and sloughing tissue, and have (2.) as many small irritating seton-threads attached to these masses, as there are vessels tied. Further, they (3.) retain these small sloughs, and the long threads which are anchored to them, for five, ten, or more days, in the depths and sides of the wound, whose surfaces they wish to cohere throughout. (4.) Each separate arterial slough inevitably sets up around it an eliminative process of ulceration and suppuration, and every ligature-thread inevitably also excites suppurative irritation along its track. Is it a great marvel then that primary union so seldom occurs in wounds so managed? Would it not be a greater marvel if union by the first intention followed oftener under such adverse circumstances?"

To obviate all these sources of irritation Dr. Simpson set himself to work to find some means of effectually compressing a vessel—a means that could be easily removed after its work was done, and a means that would be composed of some material of which the system would be tolerant, which would not act as a foreign body in it, and thereby keep up irritation, be a generator of pus, and an obstruction of union by the first intention. His own experience, as indeed that of most men in surgical practice, clearly pointed out that the latter indications are only fulfilled by metallic ligatures. Numerous and well-authenticated examples are on record of the tolerance by the living organism of metallic substances, even of considerable size, and that even in portions of the body, where *a priori*, we should have considered their presence fatal, as of bullets in the walls of the heart and in the substance of the brain; besides which he had repeatedly witnessed the tolerance of metallic ligatures in various surgical operations, so that as to the nature of the medium to be employed there could exist but little doubt. The only question that now remained to be solved was the mode of application. If used as ordinary ligatures are employed ulceration of the vessel should ensue at the point of constriction, and on its detachment the danger of secondary hemorrhage would be as great as in the old-fashioned ligature. Convinced, by his own experiments and those of others, that the vessel was secured from hemorrhage by adhesion of its walls and the formation of a plug of coagulum at a period long antecedent to the separation of the ligature, he hit upon the

happy thought that if it could be closed for such a time as to permit of this process, and only to permit of it, and that it could be then withdrawn, a great step in advance would be achieved, and that many of the causes which tend to swell our ratio of mortality in capital operations would be removed, and that thus a great boon would be conferred on all subject to operative interference. The mode in which Professor Simpson proposes to accomplish all this will be best described in his own words:—

"The instruments required for the employment of acupressure are of the simplest kind. They are chiefly applied in three modes. In the first method, the only instrument required is a long needle headed with glass

or sealing-wax to allow of sufficient pressure upon it for its introduction; in the second method, a short common sewing-needle threaded with iron-

wire or with silk; and in the third method, the same needle along with a loop of very slender passive iron-wire or thread of four or five inches in

length. The three chief methods of applying the needles are as follows:—

"*First Method of Application.*

"This was the mode which I generally adopted in most of the first acupressure operations. It consists in passing a long needle twice
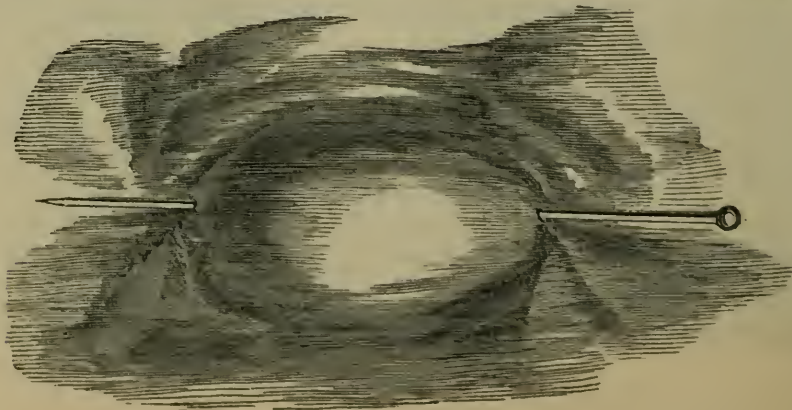
through the flaps or sides of a wound, so as to cross over and compress the mouth of the bleeding artery or its tube, just in the same way as in fastening a flower in the lapelle of our coat, we cross over and compress the stalk of it with the pin which fixes it, and with this view pass the pin twice through the lapelle. The only portion of the needle which is left exposed internally on the fresh surface of the wound is the small middle
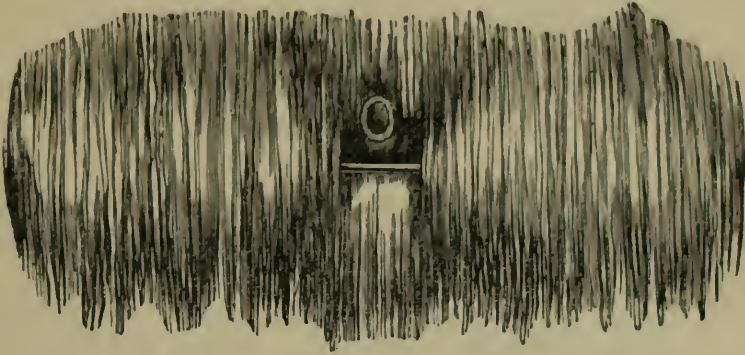
portion of it, which bridges over and compresses the arterial tube at its bleeding mouth, or a line or two or more on the cardiac side of it. And if it were a matter of any moment, this part need not always be left bare, for the needle could be often passed, a few lines higher up, *between* the vessel and the cut surface, and without emerging on that surface. More or less of both extremities of the needle, viz., its head and point, are exposed externally on the cutaneous surface of the side or flap of the wound. When passing the needle in this method, the surgeon usually places the point of his left forefinger or of his thumb upon the mouth of the bleeding vessel, and with his right hand he introduces the needle from the cutaneous surface, and passes it right through the whole thickness of the flap till its point projects for a couple of lines or so from the surface of the wound, a little to the right side of the tube of the vessel. Then, by forcibly inclining the head of the needle towards his right, he brings the projecting portion of its point *firmly* down upon the site of the vessel, and after seeing that it thus quite shuts the artery, he makes it re-enter the flap as near as possible to the left side of the vessel, and pushes on the needle through the flesh till its point comes out again at the cutaneous surface. In this mode we use the cutaneous walls and component substance of the flap as a resisting medium, against which we compress and close the arterial tube. But in some wounds a neighbouring bone or other firm unyielding texture forms the best and readiest point of resistance against which to pin and compress the artery by the acupressure needle. In such cases, the end of the finger at the bleeding point is sometimes necessary to assist the needle in duly pressing it down upon or against the open vessel. In both those modifications of acupressure a thick flap,

or a vessel situated deeply, requires a proportionally long needle; and the amount of pressure upon the artery is easily regulated and increased when required, by the acuteness of the angle which the needle makes in its passage over the arterial tube. The degree of compression required to shut an artery by acupressure is generally by no means great, especially if care be taken to pass the needle as near as possible to the arterial tube, and without a layer or layers of elastic tissue intervening between them. This needle can be withdrawn at will, at any hour or time, by pulling at the head of it; which, I have said, is placed externally.

"There are some objections to using such long needles in acupressure when they can be avoided. They are liable to be passed so as to compress the included tissues too strongly; they compress, however slightly, an unnecessary extent of tissue; and, being partly external, they are liable to prove unwieldly and incommodious in putting on dressings, etc., to the wound, provided we do use such applications to it.

"In the method of acupressure which I have described, the long needles are introduced from the cutaneous surface, and their extremities left out *externally*. In the two other methods—the second and third—common sewing-needles are used. They are introduced on the raw surface of the wound, and are situated thus altogether *internally*, or between the lips of the wound.

"*Second Method of Application.*

"A common short sewing-needle, threaded with a short piece of iron-wire for the purpose of afterwards retracting and removing it, is dipped down into the soft textures a little to one side of the vessel, then raised up and bridged over the artery, and then finally dipped down again, and thrust into the soft tissues on the other side of the vessel. In bridging over the vessel, care must be taken to press the end of the needle down upon the mouth or tube of the bleeding artery with force sufficient to shut the arterial tube and arrest the hæmorrhage. The end of the finger
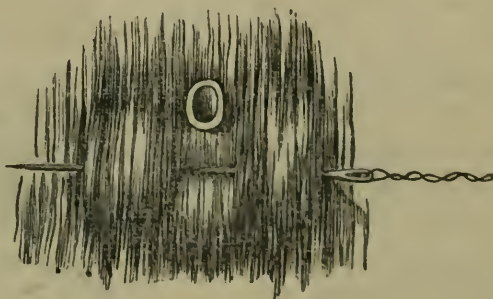
pushed against the side of the projecting portion of the needle is often

required thus to compress and close the vessel adequately, before the tip of it is sent onwards and fixed in the tissues beyond.

" *Third Method of Application.*

"This method is the one which will probably be most frequently followed. It consists in compressing the vessel between the threaded sewing-needle and a duplicature of passive iron thread. Here, as in the method last related, the cutaneous surface is left intact; but the needle is passed *below*, instead of over or above, the artery. The point of the needle is entered a few lines to one side of the vessel, then passed under or below it, and afterward pushed on, so that the point again emerges a few lines beyond the vessel. The noose or duplicature of wire is next thrown over the point of the needle; then, after being carried across the mouth or site of the vessel, and passed around the eye-end of the needle, it is pulled sufficiently tight to close the vessel; and lastly it is fixed by making it turn by a half-twist or twist around the stem of the needle. A slight half-twist usually fixes a rigid wire-thread quite perfectly. If the operator prefers, he may keep the two threads of the noose open after they bridge across the artery, and *tie* them below or behind the eye-end of the needle, in the form of a common single or double knot. A common silk thread may be used in the same way. But the tie with any kind of thread takes much longer time than the twist with metallic thread, and certainly is not more efficient. When in either case—whether the twist
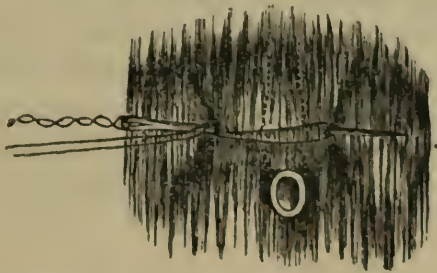
or tie has been adopted—the operator wishes to remove this simple acupressure apparatus after a period of, say five, twenty, thirty, or more hours, all he has to do in order to withdraw the needle is to pull it out, by dragging at the twisted wire with which it is threaded. The noose of wire-thread is thus at once loosened and liberated, and can be withdrawn. To distinguish easily between the wire-thread passed through the eye of the needle and the duplicature of wire, it is always convenient to mark the former by having it plaited or twisted, as represented in the woodcut; or a knot for the same purpose can be tied on the end of it.

"The mechanism of this third method of applying acupressure is not so easily described and delineated as the two first methods. Perhaps,

however, a skeleton scheme or diagram of it, will make it more intelligible.

In this scheme **A** represents the artery, which, with some surrounding tissue, is intended to be inclosed and compressed between the needle passed below it, and the wire passed over it. This diagram also shews the loop of the wire as thrown over the point-end of the needle; and it represents also that single twist of the wire around the eye-end of the threaded needle which is sufficient to fix it, and keep it fixed. For it must always be remembered, that in working with wire-thread a slight twist of it around another piece of wire-thread, or around any fixed body, as a needle, fixes and fastens it in the same way as a tie fixes and fastens a silk thread.

" When either the second or third of the preceding methods is adopted, some little care is necessary in adjusting the direction of the needles, so that the threads by which they are ultimately to be retracted may be placed in or nearly in the same line with them. In other words, the thread which is to withdraw the needle, and which for that purpose is placed outside the lips of the wound, must—in order to accomplish this object easily and readily—be laid so as to be nearly on a line with the general direction of the needle inside the wound. And, in occasional instances, the direction in which the acupressure needle is originally introduced will perhaps betimes come to be in some degree regulated, in certain wounds, with a view that the iron threads with which they are threaded may protrude to the most dependent part, or to some other selected part of the wound."

There is yet a fourth way of employing acupressure, as suggested by Professor Simpson, and also—independently of any knowledge of the fact of its having been so by Professor Simpson—by Dr. Knowles, of Aberdeen—that by transfixion and partial rotation; it is as follows:—

" A needle is placed beneath the artery, from right to left, a little above where it is bleeding, taking in as little of the surrounding tissues as possible; the point of the needle is raised, twisted round over the vessel, sufficiently far to compress it, and then pushed into the muscular tissue beyond, which serves to retain the twist thus given to the artery. Needles thus inserted can be withdrawn at any time with great ease.

All that is necessary for the performance of this plan is a bayonet-pointed needle, $2\frac{1}{2}$ inches long, having a twisted wire 3 or 4 inches in length attached to it. The needles are to be preferred made of soft-tempered steel, because, when brittle, they are apt to break."

Professor Simpson contrasts the value of acupressure, no matter which of these methods be selected, with that of the ligature as a hemostatic agent, in the following tabulated form:—

"*THE LIGATURE.*

" 1. Requires isolation, and consequently some detachment, of the end of the vessel from its vital organic connexions.

" 2. Produces direct mechanical injury, bruising, and laceration of the two internal coats of the artery.

" 3. Produces strangulation of the external coat.

" 4. Leads on, inevitably, to ulceration or molecular destruction of the external coat at the constricted part.

" 5. Causes mortification of the artery at the tied point, and usually also below it.

" 6. Produces, consequently, as many sites of ulceration and suppuration, and as many dead decomposing sloughs in each wound as there are arteries ligatured in that wound.

" 7. If organic, as of silk or hemp, imbibes animal fluids, which speedily decompose, and irritate the surrounding living structures.

"*ACUPRESSURE.*

" 1. Requires none.

" 2. Produces none.

" 3. Produces none.

" 4. Produces none.

" 5. Produces none.

" 6. Produces none.

" 7. Requires only impervious metallic needles or threads, which are incapable of imbibing animal fluids.

" THE LIGATURE.

" 8. Requires to produce the three highest stages of inflammation at each ligatured point—viz. ulceration, suppuration, and mortification.

" 9. Is not removable at the will of the operator, but, on the contrary, can only be slowly detached by the ulceration and sloughing of the ligatured vessel, and requires a period of from four or five to twenty days or more for its separation.

" 10. Stops only the artery tied.

" 11. Stops only one artery.

" 12. Generally requires two persons for its application.

" 13. Is sometimes followed by secondary hæmorrhage, as an effect of ulceration and sloughing.

" 14. Sometimes fails altogether in cases of recurring secondary hæmorrhage.

" 15. Sometimes cannot be applied till the surgeon first exposes the bleeding vessel by dissection with the knife, as in vessels retracted in amputations, in wounds of the wrist, etc.

" 16. Prevents, as a foreign body, adhesion of the sides and lips of the wound by first intention, in the course of its track, as long as it remains.

" ACUPRESSURE.

" 8. Requires to produce inflammation up to the stage of adhesion only.

" 9. Is removable in an hour or two, or in one, two, or three days, and always at the will of the operator.

" 10. Stops generally both artery and vein.

" 11. May close two or more smaller arteries by means of a single needle.

" 12. Requires only one person.

" 13. Is seldom followed by secondary hæmorrhage from ulceration or sloughing, as it produces none.

"14. Has succeeded under such circumstances where the ligature has failed.

" 15. Does not necessarily require the exposure of the vessel, and, therefore, often prevents the necessity for antecedent dissection by the knife.

" 16. Is early withdrawn, and is hence far less opposed to primary union.

"THE LIGATURE.

"17. Is apt, as an irritant body, to disturb and upset the process of primary adhesion in its vicinity.

"18. Unavoidably creates within the depths of the wound, pus, sloughs, and putrid materials, which are locked up and applied to the imbibing or absorbing cut surfaces of the wound.

"19. Places the wound therefore in very dangerous local hygienic conditions.

"20. Is not unfrequently followed by surgical fever, from its leading to the formation and absorption of septic matters from the surface of the wound.

"21. For these various reasons it makes primary union rarer—healing slower—and septic or surgical fever more frequent."

"ACUPRESSURE.

"17. Is early withdrawn and has no irritant effect.

"18. Does not create nor apply any dangerous putrefying materials to the fresh absorbing surface of the wound.

"19. Places the wound locally in far healthier hygienic conditions.

"20. Is much less likely to be followed by surgical fever, because it does not lead to the formation of septic matter, and closes the veins as well as the arteries.

"21. For these reasons it makes complete primary union more frequent—healing quicker—and septic or surgical fever less common."

These are the principles taught by Professor Simpson, and these are the modes of procedure which he advocates. Whilst conceding that each of the several described modes of employing acupressure may, under certain circumstances, have its own special advantage, our own experience, limited though it be, leads us to prefer that which is described third in order. Though apparently the most complicated, it really is not so in practice; and it undoubtedly is that by which we can most certainly and most effectually command the bleeding vessel. That acupressure can control the hemorrhage even from the largest vessel is a fact that can no longer be questioned. No one can rise from a perusal of Professor Simpson's work without having had conviction carried to his mind that, so far as a controller of hemorrhage goes, acupressure is, to say the least of it, as effective as the ligature. It has already been employed in every variety of amputation, by surgeons whose reputation is a guarantee for any course that they may advocate. In all instances

it has fulfilled every duty that hitherto the ligature has discharged. The great question that now remains to be solved is, can it accomplish more than the ligature? Will it facilitate the union of our flaps by the first intention, and thereby protect our patients from the exhaustive effects of a prolonged suppuration? Will it predispose our patients in a minor degree than at present does the ligature to erysipelas, to phlebitis, to pyemia, to surgical fever, and thereby reduce our present deplorable rate of mortality? These are the great and vitally important questions to be solved, and there is, in our opinion, but one method of solving them, and that is the *experimentum crucis.* Of one all-important fact from personal experience we can speak with confidence, and that is, that acupressure can as effectually as the ligature control hemorrhage. With the knowledge of such a fact staring us in the face are we not more than justified—are we not loudly called upon, by every sense of the duty which we owe to humanity and to our profession, to submit to searching investigation its other claims upon our attention? Is it not the absolute duty, morally incumbent upon every surgeon to whom the opportunity is afforded, by its employment to test, in the most exhaustive manner, the results that will follow upon the use of acupressure, and to record his cases, so as to afford us, at as early a date as possible, a number sufficiently large to enable us to contrast the per centage of mortality consequent upon amputations in which the hemorrhage was controlled by acupressure with those in which it had been controlled by the ligature? As to the probable nature of the resulting statistics we feel it to be too important a subject upon which to speculate; still, we may be permitted to state that for ourselves we are sanguine upon the point. All the cases of which we have hitherto read, or which we have seen, present most encouraging results; and if acupressure does hereafter prove to be the boon so heartily to be wished for, all we can say is that *la chirurgie reconnoissante* should, in common justice, erect two pedestals, upon one of which should be placed the statue of Ambrose Paré and on the other that of J. Y. Simpson.

In conclusion, we have only to remark that, independent of the great and important discovery here described, this work is otherwise full of interest, and sets forth an amount of professional lore and of industry on the part of its talented author that cannot fail to command the respect of every reader. We could not commend to our readers attention a greater literary treat than its perusal. From the bottom of our hearts we wish it every success.

1. *Registration of Births and Deaths, Ireland; Weekly Return of Births and Deaths in the City of Dublin (Municipal Boundary) during the Year* 1864.

2. *Quarterly Returns of Births, Deaths, and Marriages Registered in Ireland during the Year* 1864. (Nos. 1–4.)

BY the statute 26 Vic., cap. 11, provision was made for the registration of births and deaths in this country, and this act came into operation 1st January, 1864. It is not our province to discuss the political causes which so long delayed this useful measure, and made Ireland a bye-word to the statisticians of Europe; but we may congratulate our country on the success which has even already attended the operation of this wise and prudent piece of legislation.

It was presumed that considerable difficulty would be encountered in obtaining the necessary returns, but any one who may look over these returns before us will see that all classes seem to have co-operated with the Legislature in carrying into effect a measure which every one, whose opinion is entitled to any respect, admits to be of the greatest value to the well-being of the State.

With regard to these returns generally, it is fair to state that, although they are published by authority of Mr. Donnelly, the Registrar-General for Ireland, yet they are the work of Dr. Burke, the Medical Superintendent Registrar; and we understand that it is owing to some legal technicality that his name is not appended to them. This defect should be remedied; for every one knows that no layman however gifted (and here we may pay a just tribute to Mr. Donnelly's acknowledged ability) could turn out reports such as these. They are rightly considered professional work, and are paid for by the State as such.

The causes of death are registered according to Dr. Farr's well-known Nosology, a copy of which, with instructions to coroners and suggestions to medical men, was sent to every practitioner in Ireland by the Registrar-General.

We do not here intend to enter into the presumed merits or demerits of this nosology as compared with others, and especially with that of Sir William Wilde, hitherto used in our Census returns. (See our review on this subject in the number of this Journal for May, 1864.) We know that Dr. Farr's nosology is by no means considered infallible by the *consensus communis* of our profession; but

it has one advantage which no other nosology can have at present—the returns based on it can be compared with those in England.

The weekly returns now before us refer only to the municipal boundary of Dublin, and not only exclude Kingstown and the uninterrupted townships or suburbs between it and the city, but also Rathgar, Rathmines, Pembroke, and most other parts of the " Dublin" of common parlance, in which the well-to-do middle classes, and most of the upper classes, habitually reside.

We do not know whose fault this is, but it effectually defeats the object aimed at in having weekly returns in a large city. From our death-rate and the apparent per centage of cases of epidemic disease one may fairly conclude that instead of Dublin being, as it really is, a healthy city, it is quite the reverse. The returns for London take in such a wide area as to include Greenwich, and the result is, doubtless, a close approximation to the truth. The healthiness of the suburban districts is set down against the state of the " City " proper, and every one can see where the unhealthy and where the healthy districts lie. Our city returns are about as valuable as those of London would be did they exclude Pimlico, Belgravia, and all the rest of the West-End, with the suburban residences of the middle classes on the North, South, and East. For purposes of comparison with London our city returns are useless.

Within our municipal boundary there were registered, in 1864, 7,384 births, being equal to 1 in every 34·5, or 2·9 per cent. of the population, according to the census of 1861. The sexes were in the proportion of 101·7 males to 100 females. The number registered during the first quarter was 1,514; during the second quarter, 2,020; during the third quarter, 1,930, and during the fourth quarter, 1,920. If any reliable deduction can be made from the results of a single year it is plain that gentlemen and ladies who prefer male children to female should reside North of the Liffey, while those of a contrary opinion should " go South." We derive this view from the fact that North of the Liffey there were registered 3,486 births—1,801 boys and 1,685 girls, or 106·9 of the former to 100 of the latter; the total being equal to 1 in every 31·3, or 3·2 per cent. of the population. On the South side the number registered was 3,898—1,923 boys and 1,975 girls, or 97·4 of the former to 100 of the latter; the total being equal to 1 in every 37·4, or 2·7 per cent. of the population.

The number of deaths registered in the city in 1864 was 6,260,

or 1 in every 40·7, or 2·5 per cent. of the population   The sexes were—males, 3,079; females, 3,181, or 96·8 of the former to 100 of the latter.   The registered deaths North of the Liffey amounted to 2,661—1,303 males and 1,358 females, or 95·9 males to 100 females, being 1 in every 41, or 2·4 per cent.   On the South side the number was 3,599—males, 1,776; females, 1,823; proportion, 97·4 to 100; being 1 in every 40·5, or 2·5 per cent.

The total of deaths stated quarterly is thus:—First quarter, 1,940; second quarter, 1,474; third quarter, 1,285; fourth quarter, 1,561.

" Of the 6,260 deaths registered in Dublin city during the year, 1,036 occurred in the hospitals, prisons, and lunatic asylums situated within the municipal boundary; 498 took place in the North Dublin Union Workhouse, and 624 in the South Dublin Union Workhouse, making a total for public institutions of 2,158, or 34·5 per cent. of the total deaths registered."

The numbers of deaths from various diseases and the ratio of deaths from each disease to total deaths from all causes may be shortly tabulated thus:—

Zymotic diseases.	Total No of Deaths.	Ratio of Deaths from each Disease to total Deaths from all causes.
Small-pox, - - · -	41, 1 in every	153
Measles, - - - -	8, ,,	782
Scarlatina, - - - -	98, ,,	64
Diphtheria, - - - -	13, ,,	482
Whooping cough, - - -	65, ,,	96
Fever, - - - -	348, ,,	18
Diarrhea, - - - -	170, ,,	37
Other zymotic diseases, - -	306, ,,	20
Total, - -	1,049, ,,	6

Constitutional Diseases.		
Phthisis, - - - -	775, ,,	8
Other diseases, - - -	620, ,,	10
Total, - -	1,395, ,,	4·5

	Total No. of Deaths.		Ratio of Deaths from each Disease to total Deaths from all causes.
Local Diseases.			
Diseases of brain and nervous system,	922,	,,	6 8
Diseases of heart & circulatory organs,	267,	,,	23·
Diseases of respiratory organs,	- 1,314,	,,	4·8
Diseases of digestive organs,	- 201,	,,	31
Diseases of urinary organs, -	- 90,	,,	69
Diseases of organs of generation,	- 18,	,,	348
Diseases of organs of locomotion,	- 12,	,,	522
Diseases of integumentary system,	- 22,	,,	285
Total, -	- 2,846,	,,	2·2
Developmental diseases, -	- 673,	,,	9
Violent deaths, - -	- 144,	,,	43
Causes not specified, or ill defined,	- 153,	,,	41
Total from all causes, -	- 6,260,		

It is stated that the fever cases were chiefly typhus, and it has been observed that they formed one-eighteenth of all the registered deaths in Dublin. Of these registered deaths 17·4 per cent. were those of infants under one year old; 12·2 per cent. were those of infants aged between one and five years; the per centage of other ages may be thus shortly stated:—

> Between 5 and 10 years, 3·9 per cent.
> Between 10 and 20 years, 4·6 per cent.
> Between 20 and 40 years, 17·3 per cent.
> Between 40 and 60 years, 19·2 per cent.
> Between 60 and 80 years, 21 per cent.
> Between 80 and upwards, 4·1 per cent.

The number in this last case was 254, and of them 34 were nonagenarians, and 3 (females) were aged respectively 100, 102, and 106. The deaths of persons 60 years old and upwards formed 25·1 per cent. of the total deaths registered.

We have thus far spoken of statistics derived from the returns for the city of Dublin; we now turn to those from the returns throughout the whole of Ireland, for the purposes of which the country has been divided into eight districts. for the area and geographical limits of each of which we must refer the reader to the returns

themselves. They are roughly described by their names:—1. North Eastern; 2. North Western; 3. Eastern; 4. North Midland; 5. South Midland; 6. Western; 7. South Eastern; and 8. South Western.

The number of births registered in Ireland during the year 1864 amounted to 136,643, of whom 70,254 were boys and 66,389 girls (being in the proportion of 94·5 of the latter to 100 of the former), affording a ratio of 1 in 42·44 or 2·36 per cent. of the population. This apparently low birth rate is in part accounted for by emigration, but is still more owing to the difficulties the registrars have met with in carrying out the provisions of the law. The Registrar-General complains that, notwithstanding every possible publicity being given to the requirements of the law, many cases have occurred in which its provisions were neglected "owing to the apathy and indifference of the people in several parts of the country."

The number of deaths registered in 1864 amounted to 94,075— 46,873 males and 47,202 females, or 99·3 of the former to 100 of the latter, giving a ratio of 1 in 61·64, or 1·62 per cent.

Emigration.—During the year 1864 the number of persons who sailed from Irish ports, having stated to the enumerators "that it was *not their intention to return*," amounted to 114,169!

The meteorological observations in these returns were taken at the Ordnance Survey Office,[a] Phœnix Park, and were furnished by Captain Wilkinson, R.E. We cannot here give even an analytical outline of these observations, which are too valuable to be disposed of in a summary way; we may just state that the mean value of the barometrical readings in 1864 was 29·763 inches; the highest 30·587, and the lowest 28·390 inches. The mean temperature of the air was 49·0°; the maximum 81·4°, and the minimum 14·8°. The rain-fall in 1864 measured *only* 25·487 inches; the greatest rain-fall in twenty-four hours was 1·696 inches. As observed at 9 30, a.m., the wind blew from the East 69 days; from the North, 21; from the N.E., 31; from the S.E., 21; from the S., 23; from the S.W., 93; from the W., 79; and from the N.W., 24 days.

The return of marriages is imperfect, as it does not include the last quarter of the year; however the number registered during the quarter ending September 30 amounted to 1,375, or an annual ratio of one marriage to every 204 of the population.

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[a] Latitude, 53° 21' 44·65'' North; longitude, 6° 21' 6·35'' West; height above the sea, 158·8 feet.

Our readers will do well to inspect the Registrar's notes, which give valuable information as to the prevalence of epidemics or other serious diseases in particular localities, as well as concise descriptions of the abundance or want of good food in various places. One painful fact is frequently set before us—the prevalence of fever of various types, but particularly of our Irish typhus. We hope for great sanitary and hygienic good from these carefully-prepared returns; they have been too long delayed, but yet they are better late than never. We only wish that some *real power* was given to *somebody* in this city to remove nuisances which are hotbeds of disease in its most crowded parts.

Recherches sur la Syphilis, Appuyées de Tableaux de Statistique, Tirês des Archives des Hôpitaux de Christiania. Par W. BOECK, Professeur de la Faculté de Médecine de Christiania. Ouvrage Publié aux Frais du Gouvernement. Christiania, 1862. 4to., pp. 509.

Researches on Syphilis, Based on Statistical Tables, Taken from the Records of the Hospitals of Christiania. By W. BOECK, Professor of Medicine in Christiania. Published at the Expense of the Government. Christiania, 1862. Quarto, pp. 509.

ON the 17th of February, 1859, Dr. Boeck addressed a petition to the Minister of the Interior, stating that he had for many years devoted himself to the study of syphilitic diseases, and professing his conviction that by the statistical method alone could many of the most important questions on this subject be decided; at the same time making an application for sufficient funds to publish the results of his researches among the registers of the hospitals of his country for the last thirty years. The effect of his petition was the splendid work before us, published in French, by order of the Government, in 1862. The principal points which he proposes in this quarto volume are—(*a*) the duration of treatment, and the number of relapses under the mercurial plan, hitherto the most universally adopted remedy—(the treatment of syphilis); (*b*) the state of health of the patients at a subsequent period—(constitutional syphilis); (*c*) the influence of syphilis upon children—(hereditary syphilis).

Professor Boeck has been well known to the medical world in connexion with the treatment of syphilis by inoculation. For more than twelve years he has made a point of treating all cases of constitutional syphilis by syphilization (provided they had not previously been treated with mercury). Several of his professional brethren in Norway have done the same thing, and the results have been invariably most successful—so much so as to exceed his most sanguine expectations. Every new theory, says the Professor, in a letter we have recently received from him on this subject, creates opposition, and syphilization itself being a thing which certainly looks very much like a paradox, it is quite natural that those who have not watched the experiments and their results with their own eyes should feel disposed to regard it as a mere delusion—the more so as a Norwegian author condemns it, who, as may naturally be supposed, should have seen these experiments himself so as to have been able to speak the truth regarding them. It is very easy, however, to argue on general grounds against a theory as being, *a priori*, objectionable, and therefore untrue; but to facts and experience Professor Boeck appeals. After having observed the successful results of syphilization for four years, he requested three of the first medical men of Christiania to form a committee, and give their opinion upon the results of this mode of treatment. These gentlemen began their observations in 1856, and continued them for three years. They did not, however, give their final opinion until the year 1862, and the following was the deliverance given by the committee on the subject:—" To the best of our judgment we look upon syphilization as a curative method far superior to derivation; and, although we cannot state that syphilis is always completely cured by this proceeding, we perfectly agree that we do not know any method of treatment as effective as syphilization for patients who have not previously gone through the mercurial treatment."

As, before any remedy can be admitted as a specific for syphilis, it must stand two tests—it must secure the patient against relapses and ensure the propagation of healthy children—Dr. Boeck, in the work before us, brings to their trial, side by side, mercury and syphilization, and gives the results of a careful and unprejudiced employment of each. Neither, he says, can stand the two tests; but the better resistance to the disease is made by the inoculation of syphilitic matter, though it must be admitted to be a mode of treatment often most tedious and repugnant to ideas of cleanliness.

Neither of these plans is a specific; mercury, even, must be rejected as an indispensable part of the treatment; both may render the disease latent for an indefinite period, but do not ensure a patient against a future outbreak. Mercury may suppress the phenomena, but cannot eradicate the disease.

From the year 1826 to the year 1856, inclusive, there were treated for primary syphilis, in the hospitals of Christiania, a total of 1,500 individuals—1,127 men and 373 women—who had never previously been affected with constitutional syphilis; 136 of these having been attacked several times, the number of primary cases is reduced to 1,679.

1,083 primary cases were treated with mercury, and the mean duration of the treatment was 60 days; 626 primary cases were treated without mercury, and the mean duration of the treatment was 40 days. With those who were treated with mercury various preparations of that medicine were used, with the following results:—(*a*) with the soluble mercury of Hahnemann 473 persons were treated—the mean duration of treatment, 59 days; (*b*) with calomel, 499 persons—mean duration of treatment, 60 days; (*c*) with the proto-iodide of mercury, 76—mean duration of treatment, 66 days; (*d*) by the cure of Dzondi, 27—mean duration of treatment, 67 days. 175 persons were treated for primary affections with sulphate of magnesia and external applications, the mean duration of treatment was 35 days; 22 with iodide of potassium, mean duration of treatment 70 days; 416 were treated by external applications alone, and the mean duration of treatment was 40 days. The advantages of the mercurial and the non-mercurial treatment, as applied to suppurating buboes, are compared in the cases of 167 individuals, 98 of whom were treated with mercury for a mean period of 86 days, and 69 without it, for a mean period of 63. These figures show, that in the case of suppurating buboes, as well as in those of primary sores, the non-mercurial is the more expeditious mode of cure. The next and more important question is, which treatment is most likely to prevent the eruption of constitutional syphilis. Of the 1,008 cases treated for primary syphilis with mercury 242, or 24 per cent., returned to hospital with constitutional syphilis; whereas, but 14 per cent. of those treated non-mercurially were thus affected.

For the last twelve years Dr. Boeck had charge of part of the section for syphilitic diseases of the University Hospital. In the first year he still used calomel for indurated chancres, commencing

with five centigrammes morning and evening, and increasing the dose every five days by three centigrammes. Since the year 1851 he has ceased to use mercury in primary cases, having observed that after a mercurial treatment the patients soon returned to the hospital with constitutional syphilis. His actual treatment of chancre is as follows:—If the induration, at the time of admission, is unmistakably characteristic he applies nothing but lint steeped in plain water, or in a weak solution of sulphate of zinc; and from time to time touches the ulcer lightly with nitrate of silver. If the chancre is not indu-rated, or the induration doubtful, he cauterizes the ulcer, to destroy, if possible, the syphilitic virus, and prevent the simple becoming an indurated ulcer; the caustic employed is either Ricord's paste (charcoal and sulphuric acid), Vienna paste, or the actual cautery. When the ulcer has been cauterized, and the eschar has separated, the sore is dressed with plain water, or, according to circumstances, with a stimulating lotion of sulphate of zinc, chloride of lime, aromatic wine, etc. In his opinion the safest conduct, with regard to a phage-denic chancre, is to destroy it energetically; and he regards the red-hot iron as the most efficacious means, provided that the situation of the ulcer permit of its application. A diagnostic inoculation on the thigh was followed by violent local phagedenism, so as to imperil the patient's existence; repeated and active employment of the red iron saved the person's life. For phagedenic ulcers on the genitals he has sometimes used, with success, the perchloride of iron, internally and externally, prescribing, at the same time, a tonic and stimulating diet. He opens the buboes which appear with soft chancre, upon the first sign of fluctuation, if they come under his notice in time, by this means avoiding a more profuse suppuration; but if the formation of matter does increase, or if the development of the bubo is far advanced when submitted to treatment, an incision is made the whole length of the bubo; it is daily touched with nitrate of silver or tincture of iodine; in other respects it is treated as a simple ulcer; if there is any surrounding induration it is covered with a poultice. The patient is directed to keep himself as much at rest as possible during the treatment of the primary ulcers, but is not confined to bed, and save a restriction to unstimulating food is not limited as to diet.

A question has been raised in modern times, are these phenomena, which are consecutive to an infecting sore, which has been treated with mercury, the phenomena of syphilis, or of syphilis complicated by a mineral poison; or is the mercury alone responsible for them.

Boeck concludes from his observations that all the sequelæ, such as destructive ulcerations of bone, paralysis, lesions of viscera, which may occur after the mercurial treatment of syphilis, may also occur after the non-mercurial treatment; but that they occur more rarely, and only at a very distant period from infection, after the treatment without mercury; it is evident, he says, that the use of mercury accelerates their development; and it may be laid down as a general rule that the earlier a mercurial treatment for indurated chancre or for primary constitutional syphilis is commenced the more likely will the entire series of syphilitic phenomena be to appear subsequently. Another point which has been disputed is—are mucous tubercles a primary symptom, or an evidence of constitutional syphilis, or do they simply arise from the irritating contact of unhealthy discharges? The first opinion arose from the occasional impossibility of finding any trace or evidences of an antecedent chancre; this difficulty is often experienced in condylomata on the female, because the syphilitic ulcer of the female is seldom indurated, and consequently, when healed, leaves very little trace of its existence; and super-added to this, is the greater care requisite in examination of the more complicated organs of generation of the female, rendering a search for a chancre which really exists, unless very carefully made, likely to be unsuccessful; but in men a pre-existent sore will be always found, or else evidence of its having been, when mucous tubercles are found.

Boeck believes that these mucous tubercles are always a symptom of constitutional syphilis. He found them to form the *first* consti-tutional symptom in 249 individuals; they always succeed to a primary sore, acquired by contagion; and they never owe their existence to blennorrhagic discharges. Boeck believes that all forms of chancres are produced by the same virus, and that the variable intensity of the virus is the cause of the different forms and the different periods of incubation of the chancres. He acknowledges to be true, though subject to many exceptions, the great rule of Ricord, that a soft chancre, with or without suppurating bubo, remains local, while an indurated chancre, with its pleiad, gives rise to constitutional syphilis. He does not expect to meet much contradiction when he asserts that it not unfrequently happens that women become infected from a soft chancre whose cicatrix also remained free from induration. Aware of the numerous objections to this theory, and professing himself very incredulous in every-thing concerned with syphilis, yet he cannot remain unconvinced

by several cases which have come under his notice, one of which he quotes—that of a very young girl, Karen Ellingsdatter, whose sister was a prostitute, and who wished to devote herself to the same profession. She presented herself before M. Lund, the inspecting physician, who gave her a certificate of health, observing at the same time that she still possessed a hymen. A few days after she was admitted into hospital, under M. Boeck, who found some small unindurated ulcers near the orifices of the excretory ducts of the vulvo-vaginal glands. She was examined frequently, and with the greatest care, without the discovery of any other affection; but, about six weeks after the appearance of the small ulcers, constitutional syphilis manifested itself. Feeling convinced that the carefulness of the examinations cannot be questioned, he states his firm belief in the fact that a soft chancre can entail constitutional syphilis in women. As to its occurrence in men, under similar circumstances, he coincides with the received opinion that, as a general rule, soft chancre, with or without bubo, is not followed by secondary syphilis, but thinks there are exceptions to the rule. More exact is the doctrine which teaches that indurated chancre is followed by constitutional syphilis; and he holds it impossible to say whether this great rule has not also exceptions. Several times he has observed persons who have had a chancre plainly indurated, and who have remained more than a year without secondary symptoms; he anticipated the objection that these persons might have had a slight and transient roseola, which could have escaped the notice of the patient and himself, by having instructed them to be on the look-out for, and inform him of, even the least appearance of such a rash.

For constitutional syphilis 3,123 persons were treated by mercury, the mean duration of the treatment was 126 days; 33 per cent. of these had returns of the disease. 283 persons were treated without mercury, the mean time of treatment was 106 days; 28 per cent. had returns of the disease. 243 persons were treated for the first constitutional affection by syphilization, the mean duration of treatment was 143 days; 11 per cent. had returns of the disease.

The two great points of this book are the efficacy of the non-mercurial treatment, and the inoculation of syphilitic matter as a mode of cure. Boeck states that he has often inoculated from the indurated chancre. The generally-received opinion is, that the subject of an indurated chancre is not himself susceptible of a fresh receipt of the virus of such a chancre. Boeck acknowledges

that the scanty serous discharge of the hard chancre ceases to be inoculable at a certain period; but states that if the sore be then covered with charpie, at the end of twenty-four hours there will be an abundant secretion of matter, thick and purulent, the inoculation with which will give positive results in most cases.

Clinical Observations on Functional Nervous Disorders. By C. HANDFIELD JONES, Physician to St. Mary's Hospital. 8vo. pp. 581. Churchill and Sons, London, 1864.

IN the work now before us the author confines himself to the study of those disorders of the nervous system which do not apparently proceed from any manifest organic lesion, but only depend on functional derangement. At the very commencement of his book he declines entering into the question of whether any such truly functional diseases really exist; though he is of opinion, " that in all morbid action the cells and the fibres of the organs undergo some molecular change from their perfectly normal condition." Having commenced with the general pathology of the nervous system, to which he devotes fifty pages, he passes to the consideration of cerebral and spinal anemia and hyperemia; but before we follow him in these chapters, we desire specially to call the attention of our readers to the following sentences which appear in the introduction, page 9:—" While duly estimating morbid anatomy and minute physical diagnosis, I cannot but reiterate the wish I have several years ago expressed—that we were more earnest in inquiring into the working of our means of cure and gaining a more thorough mastery over them." . . . " What is the real value of colchicum in gouty disease? Is digitalis to be specially relied on as a safe stimulant to a weak and failing heart? Have mercury and antimony a positive control over sthenic inflammatory action, or have they none? What is the real action of opium?" We fully concur with these opinions of Dr. H. Jones, and have often expressed our strong desire that more attention should be devoted to the study of materia medica; and when we say study, we do not mean the committing to memory the assertions of by-gone physicians, and taking for granted that the properties of medical substances are such as are laid down in books; but the careful re-examination of all medicines and the retesting of their effects so as to obtain a clearer insight into their physiological properties and consequently their remedial powers We are greatly inclined to believe that if such a

careful examination were instituted many a drug would be found to possess very different properties to those ascribed to it in books. The chapter devoted to cerebral anemia contains some interesting cases, with good clear diagnostic guidance and sound directions for treatment. Our author evidently takes a different view from Radcliffe, who considers that all spasm, convulsion, tremor, &c., &c., depends on vital exhaustion and not on vital stimulation; but we shall not enter that arena of physiological discussion, but pass on to the chapter on hyperemia of the brain, which contains several interesting cases well deserving to be carefully read and contrasted with those in the previous chapter. We then come to what Dr. H. Jones calls cerebral paresis, a condition of brain that may be induced by many and various causes—over study, malarious exhalation, venereal excesses, &c.; the cases detailed are most interesting and the indications for treatment sound. With regard, however, to the administration of phosphorus, which our author recommends, we must confess that in our hands it has not proved of that value that we had anticipated; at the same time we wish to call attention to a remedy which he has completely overlooked, viz., nitric acid—which we have found of the very greatest benefit in cases of nervous exhaustion; we employ it very frequently, and in very large doses, and the results we have obtained have often surprised ourselves; it seemed as if it acted like a direct nerve food, its action was so immediate and decided. Chapter IX. is devoted to the consideration of cerebral excitement; throughout the whole of it constant references is made to the writings of the late Dr. Graves. Following the advice of that great physician our author recommends tartar emetic and opium in the treatment of it, quoting from the clinical lectures as follows:—" He was on the border of frantic madness; his pulse almost uncountable for quickness, and exceedingly weak, with cold extremities; the most experienced would hesitate as to the proper means to be adopted; very few leeches would kill him, cold affusion seemed inadmissible; yet, this man took twelve grains of tartar emetic in less than forty-eight hours without any prostration, while the cerebral excitement was calmed, sleep induced, and the pulse rendered slower and much softer and fuller." Such treatment, no doubt, did succeed in the hands of of that illustrious physician; but we, who have had the privilege of observing his practice day by day, would still caution the young practitioner to be careful how he tampers with so lowering a remedy as tartar emetic, for we can assure him that we have heard of very

different results in less experienced hands, and we would remind the younger portion of our readers that the cases which succeed best under tartar emetic and opium treatment are those characterized by a sharp quick pulse, dry hot skin, watchful ferrety injected eyes, and a quick busy delirium; and even in these it requires to be carefully administered, and its effects well watched. The eleventh chapter treats of tetanus, and here we do not think that Dr. H. Jones gives sufficient prominence to the treatment of it by nicotine, which is only mentioned in a casual way at the end of the chapter, and the distinguished physiologist who has so strongly advocated its use is not mentioned at all. We believe, with Richardson, Wells, Thomson, Roser, &c., that a poisonous matter, analogous to strychnine and the poison of rabies, is self-generated in tetanic cases; and we further believe that we possess in nicotine a very valuable and reliable remedy, not as an antidote, but as a means of preventing the exhaustion of the patient while nature is at work eliminating the poison, at the same time that we would urge amputation or resection of the part wherever practicable, in order to cut off the supply of poison to the system. Passing over catalepsy, epilepsy, paralysis agitans, chorea, &c., all chapters well worthy of being read, but offering nothing new, we come to the respiratory neuroses, among which we select asthma for our examination. The author truly says of this disease—"it is essentially a neurosis, though it is rare to meet with it in a pure form, being usually attended with more or less of bronchitis." We have, however, the advantage of knowing a case of pure uncomplicated asthma in a medical friend and colleague, and having had ample opportunities of observing this one we fully concur with the following expressions of our author:—" I am led to regard true asthma as a tetanoid disorder of the motor nerve of the bronchi, and as in a great measure dependent, like Epilepsy, on morbid irritability of certain nervous centres, probably located rather in the spinal than in the encephalic district." This view, however, of the pathology of asthma is not new, and was first propounded by Dr. Kidd, of this city, in this Journal, Vol. XXX., p. 232; Vol. XXXI., p. 301. There would still remain for our examination the chapters on hysteria, malarioid, disease, and various other neuroses, but we have sufficiently shown the character and object of the volume before us; we therefore conclude our labour by recommending its perusal to all practitioners, and especially those who make diseases of the nervous system their special study.

PART III.

MEDICAL MISCELLANY.

Reports, Retrospects, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

ON THE IMPORTANCE OF THE APPLICATION OF PHYSIOLOGY

TO THE

PRACTICE OF MEDICINE AND SURGERY.

A LECTURE,

BY

DR. BROWN-SEQUARD.[a]

THIS lecture, I fear, will have many faults. Laying aside the principal one, of which I do not mean to speak, it has to treat of so large a number of topics that their variety will of itself form a serious obstacle to the comprehension of some of the views which will be enunciated. I shall, however, endeavour, while putting forward as many facts as possible within the compass of a lecture, to condense them, and accommodate them one with another, by establishing some tie and union between them so that they may, as far as practicable, form one connected and consistent whole. That whole will have for its principal object to show the importance to the practitioner of the study of physiology, and especially that branch of it which is grounded upon experiments on animals. Indeed a complete revolution has been made in the practice of medicine within the present century by the study of experimental facts observed upon living animals; and if, together with this source of knowledge and that which springs from the comparison of those facts with morbid cases in our own species, we make an appeal to the other branches of physiology and also to normal anatomy, especially that of the nervous centres and of the nerves at the base of the brain, we shall find that to understand the symptoms of a large class of pathological cases in our own species becomes almost as easy as to read the alphabet. In fact, many of the most complicated, the most obscure, and the most unintelligible cases of nervous disease are as easily understood as the simplest case of bronchitis, or any other simple affection of the lungs, the bowels, &c., if we have the advantage of the light which

[a] The report of this lecture has been corrected by Dr. Brown-Séquard, for this Journal, and supervised by him while passing through the press.

experimental physiology and the anatomy of the base of the brain now afford.

Suppose, for instance, a patient comes to us suffering from paralysis—an absolutely complete paralysis of the motion of one-half—say the right half—of the body, from the neck downwards. Suppose that, in addition to this paralysis of motion, he has also, on the same side, extreme hyperæsthesia or increase of sensibility in all those parts which are struck with the paralysis of motion. Suppose that we find not only extreme sensibility to touch—a symptom which we may measure accurately with a pair of compasses or the æsthesiometer—but also an extreme sensitiveness to tickling—a sensibility, by the way, quite distinct from the other. Let us suppose that we find, besides all this, that the sensibility to a prick or a pinch—in fact the sensibility to painful impressions of every kind—likewise the sensitiveness to changes of temperature—cold and heat—is also much increased. Thus you have these four species of sensibility—each of which, I repeat, is entirely distinct from the others—all greatly increased in that limb, which, at the same time, is apparently dead, inasmuch as it does not possess the least power of motion. Suppose further, that in the limbs and part of the trunk in that same side of the body the temperature is found greatly increased, that the circulation of the blood in that side is more energetic, the arteries being *fuller;* or, in other words, that there is decidedly more blood there than elsewhere in the body.

All these symptoms, observe, belong to one side of the body—*the right.* If, now, we compare them with what we find on the opposite side, they acquire still greater interest. On examining the *left* side of the body we find an absolutely reverse condition. We find that all the four species of sensibility of which I have spoken, are lost—absolutely gone—on that left side. We find that there is, on that last side (in opposition to the state which exists on the right side), a complete power of motion, not the slightest diminution of the power of the will.

Suppose we go further, and inquire into the condition of the *fifth* kind of sensibility (assuming that their number is only five), if we look for the special sensibility existing in the *muscles,* that sensibility which serves to the direction of our movements, we find that this peculiar sensibility remains perfect in the limbs of that left side, and that the motions of weight, of resistance, &c., derived from the muscular sense, also remains perfect in those otherwise anesthetic parts. There is, therefore, on the *left* side a complete anesthesia of the four first kinds of sensibility of which I have spoken, notwithstanding the persistence of the muscular sense; while on the *right* side the condition is exactly the reverse—the muscular sense is gone, and the other four species of sensibility exist in a greatly increased degree.

But what about the degree of heat in the limbs of the left side, and

what of the circulation? Here, too, the condition of things is reversed; for, on the left side there is not only a degree of heat much inferior to that on the right side of the body, but there is also an actual diminution of heat if you compare the state of those parts with their normal condition; in other words, there is an *absolute* not simply a *relative* diminution of heat on the left side. Thus, on the right side, the temperature of the body has increased, while on the left it has diminished. The case is similar as regards the circulation, which is less full in the left side than in a normal state.

These features, I think you will agree with me in saying, are striking enough; yet, there will be many others in the same individual, upon which I cannot now dwell, but which are fully as interesting and equally difficult of explanation by the practitioner who is not perfectly *au courant* with the present state of physiological science.

In *the face* (for example), on the side of the injury (admitting that an injury is the cause of these symptoms), there will be an increase of heat, an increase of sensibility, a contraction of the pupil, and a degree of occlusion of the eyelids; so that the eyes of the patient—if you look at them at the same time while open—are quite different one from the other. The eye on the side of the increased heat and hyperesthesia seems smaller, because the opening of the eyelids is smaller than on the other side.

All these effects we can produce in animals very easily; and, it has been (in some respects) my good fortune to find a number of such cases in our own species. One of the most striking of them I saw at the London Hospital, in company with my dear and talented friend, Dr. Robert M'Donnell; in that case the various symptoms which I have described were as marked as possible.

Now, what was the injury which produced all these remarkable effects? It was simply this—a complete transversal division of the right lateral half of the spinal cord in the neck; not simply a part, but, I repeat, the entire lateral half, *i. e.* the posterior column, the lateral column, the anterior column, and the gray matter of that side had been divided transversely and completely. Owing to that injury all those symptoms existed.

Now, I ask you, if any physician at the beginning of this century—not having the light afforded by the present state of physiological science—no matter how learned and able in other respects—had such a good living problem been presented to him, would he have been able to understand such a case? Decidedly not. Nay more, he would, in all probability, not have seen the case as I have described it. He would not have recognized the existence of some of the symptoms. He would likely have fallen into the same error as was committed by the great French surgeon, Boyer, who had such a case, but who never found that the

sensibility was lost on the side still under the power of the will, until the nurse, who discovered the fact by a mere chance, told him of it.

From such facts you will see the great importance of a thorough knowledge of physiology. The physiologist can have no difficulty in understanding such a case, for when he knows that the spinal cord is the organ conveying the orders of the will to the muscles—that the nerve-fibres, serving for voluntary movement, proceed along the spinal cord, so that those which serve for the movement of the limbs on the right side of the body pass along the right side of the cord, while those serving for movement of the limbs on the *left* side of the body pass along the *left* side of the cord; it is quite evident to him that such a division of the cord as I have described will cause loss of motion on one side and not upon the other. Again, the sensitive nerve-fibres which serve to the four first kinds of sensibility of which I have spoken, proceed in the spinal cord in such a manner as to go into the *opposite* side of that organ from that side of the body from which they convey the sensitive impressions—so that the nerve-fibres of sensibility in my right arm and right leg, for instance, pass into the left side of my spinal cord, and *vice versa*. Hence a division of the cord produces loss of sensibility on the side of the body opposite to that of the injury.

Equally simple is the explanation of the increase of heat in the limbs on the side of the injury. The nerves of blood vessels pass into the spinal cord on the side corresponding to that of the limbs into which they go, just as is the case for the nerves of voluntary movement, so that a division of the spinal cord on the right side produces paralysis of the nerves of blood vessels in the right side of the body, in consequence of which the impulse of the heart, being less resisted on that side than on the other, there is a greater afflux of blood, and also, as an effect of this increased quantity of blood, an increased heat, and (as a consequence of both the increased heat and the augmented quantity of blood) in a measure, also, the increased sensibility of which I have spoken—the hyperesthesia of the four kinds of sensibility.

I cannot further dwell on this class of cases. Sufficient has been said, I hope, to show how important the light physiology can throw on symptoms which certainly would have been most obscure (to say the least) to even the most eminent and learned men of the beginning of this century, who did not know the physiological facts which have since been discovered.

I will now produce another case. Let us suppose a man has sustained an injury, not of the half of the spinal cord, but an injury of one half of the medulla oblongata at the level of the decussation of the anterior pyramids, not such an injury as would destroy life at once, but an injury, a tumour, or a morbid alteration of sufficient extent to produce decided symptoms. In this case you would have all the symptoms which I have described in the former case, but with this difference, that as the anterior

pyramids decussate there, an injury on the right half of the medulla oblongata would strike the fibres of voluntary movement belonging to that side previous to their making their decussation, or, in other words, before they pass from the right side into the left side; and it would also strike these fibres of voluntary movement that have come from the left side and have already made their decussation. In this case, therefore, there would be paralysis of motion on *both* sides of the body, while, as regards the state of the blood vessels, the hyperesthesia and the anesthesia of the various kinds of sensibility, everything would be the same as in the former case.

Let us take, now, a case of injury a little higher up and we shall find other striking differences.

A patient, I suppose, comes to you with paralysis of the external rectus of the eye on the right side. The face is also paralysed on the same side. There is, besides, anesthesia of the face on that side; while the left side of the body is affected with paralysis both of sensibility and motion. Here there is a case absolutely distinct from both the others. I cannot dwell, at length, on the remaining symptoms of the case, but I must not pass from it without noticing one most striking feature. You will often find, in such cases, that the tongue of the patient is perfectly free, there is no loss of movement at all in that organ, and there is no impediment of speech. You will find that the facial paralysis is of exactly the same kind as that which takes place when the facial nerve, outside the cranium, has been injured—*i. e.* the muscles which communicate expression to the face and the orbicularis palpebræ are paralysed. This case, therefore, is quite distinct from cases of hemiplegia arising from disease of the brain. As you are aware, in cases of paralysis arising from injury to the brain, the paralysis of the face is on the same side with that of the body, and the orbicularis is not paralysed, while the tongue is almost always somewhat paralysed. In the case I am now speaking of the distinction is striking. The drawing of the face on one side, owing to the paralysis of the other side, takes place on the side of the paralysis of the body instead of on the other side—because the paralysed side of the face is the opposite to that which is usually paralysed, Besides all this you will find that the sense of taste is altered in a good part of the tongue, on the side at which the face is anesthetic. You will find further that the patient is in a state of considerable emotion—he will shed tears and cry easily; he will gape frequently, and while gaping there will frequently be a sudden jerk of the paralysed limbs. There is also, generally, considerable giddiness and tendency to vomit. I am now mentioning only the principal symptoms.

Now, I ask, what is the explanation of this case? Do you think that the most eminent men of the beginning of this century, not knowing the sciences of physiology and anatomy as we now know them, could have understood this case? Certainly not; and thus, you perceive, an

acquaintance with physiology and anatomy is an immense help in the diagnosis of disease.

The series of symptoms I have last described belong to a case of injury of the *pons varolii*, striking, at the same time, one side of the trigeminal and of the facial nerves before they have made their decussation, which is at the lower part of the pons varolii, and striking, also, one side of the sixth pair of nerves before it has made its decussation with its fellow of the other side, thus producing paralysis on the side of the injury just as if the injury existed in the nerve itself. You must not, however, suppose that an alteration of the pons varolii will, under all circumstances, produce these effects. If the injury takes place a little higher up than the lower part of the organ, striking at the place where the facial nerve and part of the trigeminal nerve make their crossing, you will have these results :—both sides of the face will be paralysed, as regards sensibility and motion, together with the action of the external recti of the eye, and also the sense of taste in the anterior part of the tongue, while the paralysis of sensibility and motion in the body will be only on one side. In order to understand this it is quite sufficient to keep in view what the nerves of the face do when they reach the pons varolii. When the injury strikes that nervous centre above the decussation you will have, so far as regards the portions of the face and body which are paralysed, the same effects as are observable in most cases of brain disease, viz., the paralysis of the face will be on the same side with the paralysis of the body. If, on the other hand, as already stated, the injury strikes the pons varolii below the decussation the opposite effects are produced.

The question arises, therefore, how can you know whether the seat of the disease is in the pons varolii if you have not that peculiar symptom of the difference of the sides, as regards the paralysis of the face and that of the body ? There are several peculiar features, which I cannot dwell upon, which will answer that question. In the first place if the injury is in the pons varolii you will find in the beginning of the affection one most important symptom, viz., extreme coldness of that side of the body which is to become paralysed after a time, just the reverse of what will occur when the paralysis is complete, owing to a spasmodic contraction of blood vessels preceding their paralysis and dilatation.

I remember on one occasion, after one of my lectures at the Royal College of Surgeons in London, that eminent physician, Dr. T. Addison, (whose modesty, like that of almost all truly great men, was in proportion to his great talents and extensive learning) did me the great honour of asking my opinion upon a case in which the symptoms were—besides the extreme coldness, already mentioned, in one half of the body, some tingling in the fingers, a very slight ptosis of the external rectus, some jerks in the muscles of the face, on the side opposite to that of the injury (this is a symptom you do not find when the injury is higher up than the pons

varolii), also some sensations of tickling in the face (another symptom you do not find in cases where the injury is higher up than the pons); in fact the symptoms were such that although, as observed in the human species, they were new to me, who was at that time, more of a physiologist than a practitioner, I had no hesitation, simply from the teachings of physiology, in pronouncing the case to be one of disease of the pons varolii—and so it proved, as it gradually and successively presented all the symptoms which I have mentioned as characteristic of disease of that organ. As I had not, however, the advantage of making an autopsy of the case you might think me very presumptuous in holding that I had made a certain diagnosis; but really with this class of cases doubt is impossible, when the symptoms are combined, forming a group so definite and distinct that there is absolute certainty, even during life, as to their cause. It is not so when the disease goes higher up in the brain; we are then often at a loss, and it is extremely difficult to say, even, whether there is organic disease or mere temporary disorder of the circulation, and still less is it possible to say what part of the brain is the seat of the disease.

I pass on to the consideration of another kind of hemiplegia. There is one kind of that paralysis perfectly distinct from all those which I have mentioned. We will suppose a patient comes to you with some slight stiffness and tendency to throw his limbs in a wrong way when he walks. There is not a very great paralysis, but rather a decided weakness, and hardly any loss of sensibility on one side of the body. He complains also of noises in the ear, on that side, of feeling extremely giddy, and of having sometimes a tendency to turn round upon himself, like a top. Sometimes he reels as if he were intoxicated. He very frequently finds it impossible to walk straight forward. Sometimes, also, he has very great hyperesthesia to sounds; at times, also, he has a sudden tendency to fall down—it seems to him as if he cannot keep up, and that he must fall; also, that if he takes hold of something he will keep up.

This class of case is, indeed, one of the most instructive of all kinds of hemiplegia. I have now collected more than twenty-two such cases—not all seen by me. According to the autopsy which has been made in a number of these cases they are simply instances of reflex paralysis—not paralysis arising from the alteration or destruction, or, in fact, from any interruption of the conductors of voluntary motion—the paralysis in these cases is due to quite another cause. In this class of paralysis there is disease either of the petrous bone or of the base of the brain near the origin of the fifth pair of nerves, or near the place of entrance of the auditory nerve. There is, in this case, not a destruction but an irritation by a pressure (and not a very considerable pressure) on the crus cerebelli, or a small part of the pons varolii, or the medulla oblongata. Place a tumour there which has encroached slightly and gradually on the parts of the base of the brain I have named, and the

symptoms I have mentioned will appear. But let the injury go further, and the paralysis on one side of the body, viz., the side where the injury exists, will disappear; and yet the injury to the brain is greater now than it was before. From the moment that a real disorganization has taken place in the base of the brain the symptoms which existed at first disappear, and the paralysis passes from the right side of the body to the left side—the tumour being at the right side.

I regret that I cannot, owing to the limited time at my command, explain the causes of this at length; but I shall endeavour to do so in a few words. At first, in a case of the kind I speak of, there is an irritation starting from the injured part or parts, acting in the same way to produce a paralysis or an irritation from a nerve in any part of the body which causes a reflex paralysis. Acting upon the brain it produces, by a reflex influence, an alteration of some kind which the microscope has, as yet, been unable to detect, and owing to which is due a paralysis. But why is it that, if the disease at the base of the brain progresses, the paralysis disappears on the side first affected and appears on the opposite side? The explanation is this:—The part which, in the first place, was irritated, has now been destroyed altogether; there is no more irritation, and the paralysis consequently ceases on that side, but it passes to the other side of the body, because in the pons varolii and medulla oblongata there are conductors of voluntary motion passing above their decussation to go up to the brain; and hence, if an injury takes place such as to destroy some of these conductors, there will be paralysis on the opposite side of the body.

I intended bringing forward several other types of hemiplegia to show the great assistance physiology affords in explanation of such cases, but I am compelled to be brief. I must, however, mention one other species of hemiplegia—that due to hemorrhage in the cerebellum. In this case there are features which lead to accurate diagnosis; and many of these features have been discovered by experiments upon animals. One of these symptoms is vomiting; this is a constant feature of hemorrhage in the cerebellum. There may be also hyperesthesia in some parts of the body—not the whole body or even half—but in some portions. There will often likewise be amaurosis; this is generally due, not to pressure on the tubercula quadrigemina, as has been stated, but to a reflex action, as in the majority of cases there is no pressure whatever upon the tubercula quadrigemina. That it is due to a reflex action appears still more clearly when we consider what occurs in many of these cases—we may find the amaurosis existing in the left eye alone, in the right eye alone, or in both eyes—nay more, we may find amaurosis passing alternately from one eye to the other in the same patient, although in all those cases the disease is only in one half of the cerebellum, showing, in fact, that there is no persistency or uniformity of action in the production of

amaurosis in these cases; or, in other words, that there is the variety we know to exist in effects due to a reflex influence.

There is another kind of hemiplegia as to which I must say a few words—I mean that which is due to a lesion of the anterior lobes of the brain. Phrenologists, you know, have regarded the anterior lobes as the organs of speech; but there have been many instances—Dr. Stokes mentioned a very remarkable one to me a few days ago—in which there has been destruction of these parts without any deprivation of speech. But the question remains (and it is an interesting one) what occasions the loss of speech when such loss takes place? As regards this question I shall, in a moment or two, have to point out how great a variety of symptoms may be produced by a lesion of almost every part of the brain. The deprivation of speech I hold to be a reflex phenomenon; and that it is so, we have almost a proof in the fact that it often varies very much in the same patient, according to circumstances which physiology has, as yet, been unable to detect, but certainly with the lesion of the brain still continuing unaltered. It is worthy of remark, too, that the loss of speech is usually unaccompanied by any loss of movement in the tongue; there may be perfect freedom of motion in the tongue, and the deprivation of speech arises from the circumstance of the patient being *unable to give expression to his thoughts;* and this inability extends not merely to speech, he is equally powerless to express ideas either by signs or by writing. The paralysis, in fact, is a "paralysis of the organ of expression of ideas;" and it is remarkable that this occurs, while the individual may remain, in other respects, in full possession of his intellectual faculties, at least so far as we can judge of this possession. One of the cases of that kind I have seen was that of a clergyman, a man of remarkable intelligence. He had not lost the mechanical part of the power of speech, for he articulated a few words very distinctly—but they were sounds devoid of meaning; he was equally unable to express his thoughts by writing, or even by signs. Even when he was told to express "yes" by lifting up one finger, and no by lifting up two fingers, he was unable to do it, and showed signs of great distress at his inability; and all this, although he appeared, in other respects, very intelligent.

I pass on to notice another form of disease showing the importance of a knowledge of physiology. It is a form to the discovery of which I have been partly led by experiments on animals. A patient may come to you complaining of pain in the back, of a pricking sensation in both arms, with some degree of itching, burning, or some subjective sensation of alternate cold and heat, or some curious variety of cutaneous eruption, different from those you have usually to deal with when they are not due to nervous disease. You may find, also, some weakness or even a great paralysis in the two upper limbs; jerkings in those limbs, likewise a stiffness in some of the muscles, and tenderness under pressure. If you do not know the

physiological meaning of all these symptoms you will be led to suppose that there is some local affection—rheumatism, perhaps, of both the arms. You will think it very strange that you can find no description of any such disease in books—yet the explanation of all these phenomena, when read by the light of physiology, is very simple. The symptoms depend altogether on an inflammation of the nerves of the arms at or before their exit from the spine in the lower cervical region and the upper dorsal region. This neuritis is usually accompanied by a local spinal meningitis ; all the symptoms arise from irritation of the motor and sensitive nerves, and also of the nerves of blood vessels. If, then, you meet such a case as I have described, and applying your physiological knowledge you arrive at the true character of the injury, you may, by adopting a certain course of treatment, cure, or, at all events, greatly mitigate the disease. I have met many cases of the kind; and, with the exception of one, which I saw in consultation with Mr. W. Adams, of North London, and which terminated in death, all the cases have been either cured completely or more or less ameliorated. The treatment consists in a most active blistering of the spine in the region of the disease; also, in the application of dry cupping. Injections of narcotics have also been resorted to ; but I repeat that the principal part of the treatment consists in the repeated application of blisters to the spine. Internally I have also employed iodide of potassium ; but what share it has had in the case I do not know.

I intended to have brought forward many varieties of cases of disease of the spinal cord, but time does not allow of my doing so. I will, however, say that physiology has demonstrated these most important facts— that the spinal cord, in its most central part, which is decidedly insensible and inexcitable in its normal state, may become exquisitely sensitive and excitable under the influence of inflammation or congestion, and that when the grey matter has become sensitive, it may occasion all those strange sensations and other symptoms complained of by patients attacked with either myelitis, or great congestion of the grey matter—viz., pricking as by pins and needles, formication, itching, feeling of heavy pressure, or tightness, coldness, or heat, &c., and jerks, trembling, cramps, convulsions, contracture, &c. In cases of paraplegia this group of symptoms is generally due to a special alteration in the condition of the spinal cord, and the part of this group concerning sensation cannot be produced without congestion or inflammation, and characterize essentially these two diseases, especially the latter, and if you do not find them, in cases of paraplegia, you may be convinced that the spinal cord is free from congestion, and still more free from inflammation.

Keeping in view the object of this lecture, viz., the importance of a deep knowledge of physiology in the practice of medicine and surgery, I now proceed to notice the distinct and almost opposite features of two

cases of fracture of the spine in the cervical region. Two patients, I suppose, are brought to you—each having sustained an injury of that portion of the spine, and having, in consequence, a complete paralysis of the trunk and limbs. One of them is almost pulseless, extremely cold, and covered with a clammy perspiration. He appears almost like a dead man; there is no contraction of the muscles, the limbs hang loose and dead, his breathing almost gone, his pulse—not only very faint, but extremely slow—from 40 to 45 in a minute. If you commit the fault of bleeding him, you find that the venous blood flows out red like arterial blood—flows out, not with a great impulse, for the heart is very weak and almost in a state of syncope, but still it flows out not like venous blood—it has an impulse like arterial blood.

Now examine the other patient. In him the symptons are almost the exact contrary to those in the former. The limbs are stiff and rigid; the pulse unnaturally high; the heart's action much excited; the heat of the body, not only higher than is usual in the limbs, but absolutely higher, and by many degrees, than the temperature of the blood in health in man. If you bleed him, which may prove useful, you find that the venous blood is darker than usual, and comes out without any trace of impulse.

Now what is the explanation of these two cases? How is it that one of these patients is in a state of syncopy, and the other in a state of asphyxia? It is found by experiments performed upon animals—that in the former of these two cases the cause is an irritation—perhaps extremely slight, for the slightest prick may be sufficient—of the spinal cord—the effect of which is a stoppage of the heart's action, so that it beats with diminished force and rapidity, and as a consequence of this condition of the heart all the other symptoms above described ensue. In the other patient, on the contrary, the spinal cord has actually been cut across altogether, and the patient is in a far *worse* state, in reality, though he *seems* to be far more alive than the other. He *seems* to have the power of reaction which we wish to find in patients, yet the danger of his state is far greater—in fact, he is sure to die, while the other by means of an operation (trephining, or resection of the spine, operation which was performed by Dr. R. M'Donnell, to-day, upon a patient in this city), may possibly survive.

I proceed now to make some remarks on symptoms of brain disease. As you are aware, our view of the symptoms of disease of the brain proper—*i.e.*, the cerebral lobes—is that an injury there produces paralysis by striking the organ of the will—that there is a paralysis of the will at least for that part of the body which is paralysed, and that if other symptoms occur, they are due also to a loss of function of the part altered in the brain, or to pressure upon neighbouring parts. I have not time fully to demonstrate that the symptoms of brain disease are generally due to a reflex action, but I shall show (I hope satisfactorily) that the

admitted view is absolutely untenable. You are all familiar with the great variety of symptoms presented in brain disease. Take for instance facial paralysis. In cases of disease of the brain, paralysis (as you know) does not exist in the orbicularis, but in the other muscles of the face. Now if it is alleged that when in cases of disease of the anterior lobe of the brain, for instance, there is facial paralysis, it is because the nerve fibres of the facial nerve go to that part. I am perfectly willing to admit it; but let us take a case of injury to a different part of the brain—say, for instance, an injury in the posterior lobe—how will you explain facial paralysis in this case? Do the nerve fibres of the facial nerve go to the anterior lobe in one case, and to the posterior in the other? Surely not. In fact, the consequence of such a hypothesis would be that there is absolutely no part of the brain which would not be the spot to which the nerve fibres of the facial nerve go. If you can suppose such a hypothesis possible, I ask you to reconcile the facts with what anatomy teaches— viz., that the facial nerve goes to a certain part of the pons varolii, and no higher; so that besides the absurdity of supposing that the facial nerve goes to every part of the brain, and each part containing all these fibres, there is likewise the anatomical impossibility which arises when we examine the course of the facial nerve. Again, take another instance. The tongue, as you are aware, is in most of these cases of disease of the cerebral lobes more or less paralysed: there is some difficulty in drawing it out in a straight line—also some slight impediment in the speech, owing to paralysis of some of the fibres of the ninth pair of nerves. How will you reconcile the existence of that paralysis in the majority of cases with the fact that we do not see the fibres of the ninth pair—the hypoglossal nerves—going up higher than the medulla oblongata? Here is a patient who has a complete destruction of one-half of the pons varolii; mark, that that organ must be the place of passage—if there is any such passage—of the fibres of the hypoglossal nerves going up to the brain. Therefore when one half of the pons is diseased there must be a paralysis of the tongue—yet in most cases of disease of the pons there is no paralysis of the tongue—so that both anatomy and this clinical fact prove that the hypoglossal nerves do not go to the cerebral lobes. How then will you explain the fact that disease in *any* part of these lobes may (as we know, by experience, it does) produce paralysis of the hypoglossal pair of nerves, I leave it to you to decide. To me it seems clear that to hold that when an injury to any portion of the cerebral lobes causes paralysis of the ninth pair, or of any other nerve, it is because the paralysed nerves go to that part of the brain is decidedly wrong. If you examine a number of cases of brain disease, especially of an acute character, such as cases of quickly enlarging tumours producing irritation, and especially tumours pressing on the dura mater, you will find that for a tumour in one and the same part of the brain, there is, in some cases,

no symptom at all produced, while in other cases you may find any symptom whatever. I do not think you could point out any feature of nervous complaint that you will not find existing in some one or other of the recorded cases of injury to, or disease of any particular part of the brain. Nay more, even in one and the same individual, with one and the same persistent disease, you will often have a great change in the symptoms. He may be paralysed to-day—another day he may not; you may in fact have every variety of phenomena or no phenomenon at all—all arising from one and the same cause, so that unless you go the length of supposing that each individual part of the brain possesses every function whatever, and has the effect of acting on every part of the body in a direct way, you cannot explain these facts. Mark, that in some cases of injury to, or disease of, the cerebral lobes, there are no phenomena at all; so that while on one hand you are driven to suppose that there is no part of the brain which does not contain all the nerves of the body, you are on the other hand forced to conclude that there is no part of any nerve of the body going to the cerebral lobes. Such a hypothesis is obviously impossible. I have time only to say that the explanation which I have ventured to offer of these phenomena is, that they come under the class of effects produced by reflex action.

I shall now pass to quite different cases, but also due to a reflex action, and I will first speak of syncope when induced by a blow on the stomach. Experiments on animals have shown me that in these cases the syncope is produced by a reflex action through the abdominal sympathetic ganglions, the spinal cord, and medulla oblongata, and at last, the par vagum. I have often and often tried the experiment on animals of crushing the ganglions of the sympathetic in the abdomen. In such cases there was, sometimes, a sudden arrest of the heart's action—in other cases only a temporary diminution in the beating of the heart—while in still other cases there was hardly any effect produced. In these animals in which the effect on the heart was produced, I waited till recovery was established. I then divided the par vagum, after which I crushed again the ganglions—not the least effect was then produced on the heart's action, clearly showing that the transmission takes place through the par vagum. In those cases in which the heart is stopped—whether from the cause above assigned, or any other, such as drinking very cold water when in perspiration—or an emotion, &c., in those cases of reflex syncope, when the patients are on the verge of death, and would almost surely die if nothing were done for their immediate relief—in such conditions there is one means of restoring life, which I have found by experiments on animals to be of the utmost importance, and so much so that very frequently, even when the action of the heart was quite stopped, I have been able by simply pressing on the sternum, and by giving a hard push to the heart, to make it beat again; and after repetition of the same

means to make it resume its action. It will not beat long if the cause of the syncope is a powerful one, but still it will beat; and if you continue the use of the means mentioned, it will continue to beat, and in that way you may succeed in reviving a patient. But this is not all. If you add to that cause of revival another, which is most powerful, and which is directly the reverse of what John Hunter tried upon himself when he found he was in a state of syncope one day at the College of Surgeons ; if, instead of making the patient breathe as quickly as he can, you stop his breathing altogether, just as if you were trying to kill him by suffocation, you revive him. By producing a state of asphyxia, for about half a minute, the patient may be saved—he will have a struggle, and come out of it very quickly. Nothing indeed is more powerful to make the heart beat than an accumulation of carbonic acid in the blood. Whether I have been right or wrong in maintaining as I have done that the normal and abnormal beatings of the heart, when very tumultuous, depend chiefly upon an irritation by the carbonic acid of the blood—whether I am right in this respect or not —there is no question that if you produce temporary suffocation in these cases, you make the heart beat again, and beat with force. I should add that I have not the merit of having discovered this fact, as I find that in an old book, entitled the *Surgeon's Mate*, and published more than 200 years ago, a writer of the name of Woodall, has mentioned it as very important. He, however, does not say on what he grounded his view. There are some other features about syncope of great importance. In any case where the circulation is impeded, you may in a moment throw one or even two pounds of blood into the trunk and head, by simply pressing hard on the four main arteries of the body. If you press those four main arteries, you prevent the circulation going on in them, and at once a considerable quantity of blood returns from the venous system to the trunk, especially if the limbs are kept up so as to allow gravitation to help the movement of the blood.

A few words now upon asphyxia. There are experiments which show, as clearly as possible, that if you take two animals, one of them having had the temperature of its body very much diminished, the other at a normal temperature, and if you dip them both into water at the same time, the one which has had its temperature reduced will survive twice, three times, and sometimes even five times as much as the other—the duration of life under water being sometimes extended to twelve or fifteen minutes. The greater the previous lowering of temperature the longer the duration of life. There is another very interesting fact. It is well known that persons who have fallen into water have, in many cases, been drawn out and revived after an immersion of a number of minutes. Now, in experiments performed upon animals by applying galvanism to the par vagum so as to stop the heart's action—which is an effect that a fall into water will sometimes produce, by a reflex action from the influence of

cold on the skin, or by an emotion—we find life will last much longer; in other words, the animal will be able to survive a much longer time when dipped under water, from having had an attack of syncope just before. This case, then, is exactly the reverse of the former. In one, syncope is cured by asphyxia; in the other, asphyxia is rendered less mortal because syncope previously existed. I need not stop to show that all these notions we owe to physiological science.

I shall now say a word upon poisoning. Poisoning often produces death by causing such a diminution of temperature as is incompatible with life. Take, for example, two animals which have been poisoned with opium. Supposing the temperature to be cold in the room, lay one of them near a fire and covered carefully with warm clothes, and let the other be exposed to the cold in a corner far from the fire. You will find, *cæteris paribus*, that the one which is kept warm will survive, while the other will die. This fact we find with almost every organic poison, viz., that there is a considerable diminution of temperature produced—if not, *per se*, sufficient to occasion death, enough, at any rate, to add a powerful cause to the other causes existing. Now this diminution of temperature is a feature which we can fight against; and it is, therefore, of the utmost importance, in cases of poisoning, to use every means to keep up the temperature of the body.

I am now obliged to conclude. My object has been to show, that by the knowledge derived from experiments on animals, as well as from the knowledge derived from other physiological researches than those made upon animals, from the knowledge we derive from microscopic anatomy, and even from simple descriptive anatomy—especially as regards the base of the brain—from all these sources, combined with the careful study of pathological cases at the bed side, we can, indeed, draw a great many conclusions of importance to the practice of medicine, and be led to form a sure diagnosis in many otherwise obscure cases. I might also illustrate the importance of a knowledge of physiology—especially the advances made in that science during the last thirty years—by the successful practice of many men in this city, and in England. I shall not mention names, as, no doubt, the names of the men to whom I allude are present to your minds. To follow in the footsteps of those men, doing what they have done, and, perhaps giving more time than they have given to the study of physiology will afford you the greatest help, both in your diagnosis and prognosis; and, what will, perhaps, prove a still greater comfort to you, your conscience will always be at ease when you meet a complicated case. I trust that, as I have been speaking to many men of eminence—men much more advanced than I am in years of knowledge and practice, I hope what I have said will not hurt their feelings, and that they will find an apology for me in the fact, that as I have been a physiologist before becoming a practitioner I have, perhaps more

than most men, been able to judge of the advantages to be derived from that science. I hope, therefore, there will be no offence in my conclusion, that physiology ought to be studied more than it is.—*February 3rd, 1865.*

Memoir of John Stearne, M. & J.U.D., S.F.T.C.D., Founder and First President of the College of Physicians; including the original Charter of that College, and other Records Concerning the Profession of Physic in Ireland, never before published ; with a Review of his Writings. By T. W. BELCHER, M.D. Dublin ; B.M. and M.A. Oxon. and Dublin ; Fellow of the College, &c. Illustrated.

IN the charter of King Charles the II., by which the Irish College of Physicians was incorporated, we find fourteen Fellows appointed. The first name in this roll is "Johannes Stearne;" he was the Founder of the College ; and, as such, his memory deserves special notice and respect. Excepting a short and meagre account of him, in Sir James Ware's *Writers of Ireland* (Harris's edition, p. 159), his existence seems to have been all but forgotten until Dr. Aquilla Smith, sometime Vice-President of the College, and now King's Professor of Materia Medica and Pharmacy, rescued it from oblivion. This he did in an essay published in *The Dublin Journal of Medical Science* (Vol. XIX., p. 81), entitled " Some Account of the Origin and Early History of the College of Physicians in Ireland." The chief sources from which I have derived the information contained in this memoir are the essay of Professor Aquilla Smith already noted, the published writings of Dr. Stearne himself, and a book which I shall quote as *Barrett's MSS.*

This last consists of extracts from the Archives of Trinity College, Dublin, with Historical Comments on the same, by the late eccentric Vice-Provost Barrett.[a] That learned Irish divine and scholar the Rev. Dr. Todd kindly gave me the use of a copy of Dr. Barrett's work, transcribed by himself ; and to him, and to Dr. A. Smith, I am also indebted for verbal information and other assistance in compiling this memoir. I am also indebted for much valuable and accurate information to Sir Bernard Burke, Ulster King of Arms, and the reader will perceive that I have consulted the records of the College of Physicians.

[a] His biography has yet to be written. See a memoir of him in The Dublin University Magazine for 1841 ; and a psychological notice of him in a paper of mine entitled, A Short Biographical Notice of a Remarkable Case of Insanity.—Dublin Quarterly Journal of Medical Science, February, 1864.

DR. STEARNE'S BIRTH, FAMILY, AND EARLY LIFE.

John Stearne was born on the 26th of November, 1624, at Ardbraccan, in the County of Meath, in the house of the then bishop of that diocese, who was his grand-uncle, and whose name has descended to posterity as "Archbishop Ussher." His family, he himself tells us, was of English origin; and amongst eminent members of the same stock I may mention Richard Sterne, Archbishop of York, who died in 1683, aged 87 years; and Laurence Stearne, better known to fame as the author of *Tristram Shandy, The Sentimental Journey,* and other works. It is stated that although Archbishop Sterne was born in Nottinghamshire, yet he was descended from a Suffolk family;[a] and from this same family, members of which were now settled in various English counties, John Stearne was likewise descended.[b] According to Mr. Percy Fitzgerald (*Life of Laurence Sterne*) his father was John Stearne, of Stapleford, County Cambridge; and he came to Ireland as "officer" to Theophilus Buckworth, Bishop of Dromore, who died in 1652. This John Stearne became John Stearne, Esq., of Greenane, County Down, and married Mabel Bermingham, of Ballogh, Co. Dublin, granddaughter of Arnold (or Arland) Ussher, one of the six clerks in Chancery, father to the celebrated primate.[c] Thus, the subject of this memoir was grand-nephew to Primate James Ussher, and great grand-nephew to Primate Henry Ussher, the first Fellow of T.C.D., nominated in the charter of Queen Elizabeth. He was also great great grandson to James Stanihurst, who was Speaker of the Irish House of Commons, in the reigns of Queens Mary and Elizabeth, in

[a] See Sterne Richard, in Chalmers' Biographical Dictionary. Lond., 1812-17.

[b] Information from Rev. Dr. Todd. See also the Life of Laurence Sterne, by Percy Fitzgerald, M.A., M.R.I.A. Two vols. London. 1864.

[c] For some of this information I am indebted to my learned friend Richard Caulfield, Esq., B.A., F.S.A., Librarian to the Royal Cork Institution. The pedigree of the Stearnes, of which more hereafter (p. 448), he obtained for me from Thomas Tuckey, Esq., of Cork, a collateral descendant through Timothy Tuckey, M.D., whose weather tables are given in Smith's History of Cork (1750), Vol. ii. p. 398. Dr. Tuckey was nephew to Major-Gen. Stearne, who was son to Capt. Stearne, John's eldest brother.

The following is part of Archbishop Ussher's genealogy, drawn up by Sir William Betham, and inserted in Elrington's Life and Works of Ussher:—

Arnold (or Arland) Ussher —— Margt., dau. of Jas. Stanihurst.

| John Ussher, ob. s. p. | James Ussher, Archbip. of Armagh | Phœbe, dau. of Luke Challoner, D.D. | Margt., Wife of Robert Berming-ham. | Mable, Wife of Dr. Lewis Jones, Bishop of Kildare | Anne, Wife of William Hilton. | Sarah, Wife of Theophil. Buck-worth, Bishop of Dromore. | Ellinor, Wife of Robert Lill, of Trim, Esq. | Thoma-sine. | Eliza-beth. |

—— only child, Wife of Sir Timothy Tyrrell, Bart.

which latter reign he made the first motion for founding a college and university in Dublin.[a]

Having been liberally brought up and educated, he was sent to T.C.D.;[b] and, in the *Barrett MSS.*, among "Remarkable Admissions," from 1638 to 1644, I find the following entry :—

"22nd May, 1639, Johs., do. [son] of John Stearne, Co. Meath, [aged] 15."

Having entered college at this early age, the next circumstance I find recorded respecting him is his election to a scholarship, which should have occurred on Trinity Monday, 1641 (Barrett—*infra*).   At that time, by order of Parliament, the provost was prohibited from holding any elections to fellowships or scholarships; yet, it seems that Stearne was subsequently acknowledged to have obtained a scholarship in 1641, for Dr. Barrett states (p. 282), that he " was afterwards allowed as such."

HIS RESIDENCE IN ENGLAND, RETURN THEREFROM, POLITICAL POSITION, ETC.

Not long after the breaking out of the Irish rebellion, his studies in T.C.D. were disturbed; they soon came to an abrupt termination, and, to save his life, he fled to England.   From his grand-uncle, Archbishop Ussher, he received a commendation to Samuel Ward, D.D., then master of Sidney Sussex College, Cambridge, with whom the Archbishop had long maintained an epistolary correspondence.   Proceeding to that university he became an alumnus of Dr. Ward's College, then a place of resort for students in medicine,[c] as Gonville and Caius College is at the present day;   and, while there, he appears to have devoted himself specially to the study of medicine.   During his residence in Cambridge, which, probably, commenced in 1643, he collected materials for his *Animi Medela ;* and he describes his abode there as, at first, one of peculiar felicity and quiet.   Acknowledging his obligations to the patronage of Dr. Ward, and of his successor, Richard Minshull, D.D., as also to the kindness of the fellows, he avows his unwillingness to change his lot for the riches of the King of the Persians.   This state of things did not last;   for, after lamentably comparing his short-lived felicity to the evanescence of Jonah's gourd, he observes (address " ad Lectorem," before noted), " quietémque illam, quam ego cum Regis Persarum divitiis permutatam aliquandò nolebam;   nova et insperata excepit tempestas."   This " nova et insperata tempestas," was evidently

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[a] Bernard's Life of Archbishop James Ussher.   London.   1656.

[b] Vix dum ex ephebis egressum Collegium Sanctæ et Indiv. Trinitatis quod est propter Dublinium, sola illa et celeberrima Hiberniæ Academia alumnum Suscepit.— (Address "ad Lectorem" above noted.)

[c] Information from Rev. Dr. Todd.

the visitation of the university, in 1643, by the Parliamentary Commissioners, who, coming down on Sidney Sussex College, imprisoned Dr. Ward, and treated him so rigorously that he contracted some disease, of which he died, in great want, September 7th, 1643, six weeks after his enlargement. During the mastership of Dr. Minshull, who immediately succeeded Ward, Stearne remained for a considerable time at his college, notwithstanding the chronic state of the " tempestas." " Quacûmque (as he quaintly remarks) diú multùmque conflictatus."

He probably remained at least seven years in Cambridge, which, he informs us, he left for Oxford, where it seems many learned strangers were then residing. Here he was most kindly received by Seth Ward, Fellow of Wadham College, who was made Savilian Professor of Astronomy in 1649, and who was incorporated at the same time. Seth Ward had been a Fellow of Sidney Sussex College, Cambridge, which he had to leave on the death of his namesake, and had known Stearne there. He had now, however, found friends among the ruling powers; and Stearne, though he remained but a short time at Oxford, doubtless profited by his acquaintance with his friend the Savilian Professor. Before he went to Cambridge[a] he evidently had been elected a Fellow of T.C.D.; for Dr. Barrett states he was ejected from his fellowship by the Rump party; but, in October 1651, on his return from Bedfordshire, he was restored by order of Henry Cromwell, " to whose party he adhered.[b]" This statement of Dr. Barrett may be accepted as correct, notwithstanding the absence of any record of an election to a fellowship about that time. I have already noticed the prohibition of college elections in 1641, and this is noted in the *Commons' Journal* (Vol. I., p. 415). On the authority of Carte's Ormond (Vol. I., p. 147-8) the editor of the *Dublin University Calendar* (see list of fellows, 1641) observes :—" The reason of this is said to have been, that certain members of the college refused to give evidence or information of alleged mal-practices in the college during Lord Strafford's administration, conceiving themselves prohibited by Cap. XI. of the statutes." From the published roll of fellows it would appear that the Parliamentary prohibition continued until 1644, when the next elections took place. At this time Stearne was in Cambridge, reaping the fruit of

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[a] The following dedication (dated 1657) is prefixed to his Animi Medela :—" Almæ Matri Cantabrigiæ Academiarum longè celeberrimæ, hanc suam qualis qualis est Animi Medelam. In Summæ gratitudinis testimonium, maximæqúe observantiæ monumentum, ob factum, quum in Angliam quasi extorris appulisset, humanissiméque exceptus esset, literarum otium, offert, ejusdemq, censuræ irrefragibili submittit Johannes Stearne nuper Collegii Sidneiani in eâdem Academiâ alumnus."

See note of Barrett's conversation with Monck Mason (History of S. Patrick's Cathedral, p. 220). Sir James Ware also says he became a fellow, and was ejected by the usurpers.

his acquaintance with the two Wards;[a] so, assuming the correctness of Dr. Barrett's statement, I conclude that about 1643 he was appointed, but not legally elected, a fellow; and, as in the scholarship case, "afterwards allowed as such." His continued absence would account for his not having been legally inducted in 1644.[b] That he should have left Ireland, and remained away, at this juncture can scarcely be wondered at, if we place any confidence in his account of the then existing state of things. Speaking of the sad events of 1641, he remarks:—"Supervenit Conjuratio Hibernorum Aboriginum, post homines natos atrocissima: et quá adèo sœvitum est, ut nulla regionis sylva, nullus saltus, non aut sanguine stagnabat aut scatebat ossibus."—(Address "ad Lectorem" in *Animi Medela.*)

Stearne was evidently not a strong party politician, while he was sufficient of a philosopher to try and make the best of everything. When things were at the worst with him they began to mend; until, as Dr. Barrett states, we find him re-instated in T.C.D., in 1651. His name appears signed as Registrar on September 3rd, 1652; he was Senior Proctor in 1654; while Dr. Barrett has this extract from the admissions in the Senior Lecturer's book:—

"Dr. Stearne, 20 June, 1652; May 20, 1658; final, April 23, 1669."

On November 24th 1656, Stearne was elected Hebrew Lecturer, a post for which it appears he was peculiarly well fitted. In the instrument confirming this election,[c] the senior fellows assign to the lecturer a certain stipend, which it seems they were shabby enough to dispute about afterwards. Stearne, feeling dissatisfied, probably complained to Henry Cromwell, then Chancellor of the University, who addressed the following letter in his favour (*Barrett's MSS.*, p. 286):—

HENRY CROMWELL TO THE BOARD OF T.C.D.

"To the worshipfull the Provost and Senior Fellows of Trin. Coll., near Dublin.

"Gentlemen—After a perusal of an Instrument whereby you have elected Dr. John Stearne to be Hebrew Lecturer, and endowed the Lecture, I have ratified and confirmed the same, both approving of your care for the preservation of the Hebrew Language, and likewise commending your

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[a] Samuel Ward was an eminent divine, and was, with Bishops Hall and Carleton, sent to the Synod of Dort by King James I. Seth Ward, a pupil but no relative of the former, was afterwards Bishop of Salisbury. See their lives in Chalmers' Biographical Dictionary.

[b] "At this period (1600) it appears to have been the practice to appoint masters of arts lecturers, who assumed by degrees the name and privilege of fellows." Vol. i. Ussher's Life, by Elrington. See also Rev. Dr. Todd's Introduction to Dublin University Calendar, 1833.

[c] Barrett's MSS., p. 284.

choice of a Lecturer. And whereas by the tenor of the said Instrument Dr. Stearne is to be paid from the 20th November, 1657, I do desire that he receive his salary for the said office from the said time. For although he hath not as yet executed the said place because the election and endowment was not ratified yet considering how Small the Salary is,[a] and the Charges that Dr. Stearne must be at to furnish himself with Books for the due execution of the said place, during his natural life, I judge it very reasonable and fitting the commencement of the payment of his salary be from the 20th Nov., 1657, as you have by your instrument ordered. I rest your loving friend, Henry Cromwell. Dated 20th June, 1659."

Notwithstanding this very civil letter, Provost Winter and the senior fellows passed a resolution refusing Stearne's demand, which was for £45, and voting him £20 instead. This did not please him, so the next entry is—"Memorandum, that Dr. John Stearne, M.D., resigned his fellowship. Nov. 17, 1659."[b]

It must not be thought that Stearne resigned his fellowship simply because of a quarrel about £25. His far-seeing prudence did not desert him at this juncture; he saw that the fortune of Cromwell's family was now reversed; for Richard, having dissolved his Parliament by the advice of the officers of his army, these very men re-instated the Rump Parliament, whose first act was to cashier Richard and recall Henry from Ireland. When he saw the republicans disunited he could not fail to look forward, as many others did, to the all but certainty of the restoration of the monarchy; and (as Dr. Barrett remarks) "reflecting that in such case his appointment to a fellowship, being unstatutable as made by usurpers, would be deemed illegal, and probably incensed at the conduct of Winter and the Fellows, did prudently resign his fellowship."

DR. STEARNE'S DEGREES, HIS MEDICAL PRACTICE, ETC.

The periods at which he obtained his various degrees are involved in obscurity. The earliest record of any degree of his is in the MS. roll of Dublin Graduates, commenced some years ago by the Rev. Dr. Todd. In this roll he is simply called M.D., 1658; meaning, as I apprehend, that in 1658 he was M.D., but not that he obtained the degree in that year. I think this because, as will presently appear, in 1655 he practised physic in Dublin; and in 1654 was President of the Fraternity of Physicians in Trinity Hall, of which more hereafter.

In his various works he styles himself M. & J.U.D. (Medicinæ, et Juris Utriusque, Doctor), and occasionally M.D. only; and as the published

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[a] The stipend in question was £30 per annum.

[b] Monck Mason (Hist. of St. Patrick's Cathedral, p. 220) says "he *married* and resigned his fellowship."

roll, *Graduati Cantabrigienses*, only begins in 1660, nothing can be found of him in it. I suppose that he was incorporated B.A. at Sydney College, Cambridge; proceeded **M.A., M.B.**, and **M.D.**, at that university; was admitted *ad eundem* in Dublin, where he commenced practice on his return from Cambridge; and took the Bachelor's and Doctor's degrees in Laws on his appointment to the Public Professorship of that faculty in 1660.

In order to understand the various titles by which he is designated in his published works, it may be well to make a few explanatory remarks. He is styled "Medicinæ Doctor et Publicus Professor;" "M. & J.U.D.:" "Medicinæ et Philosophiæ Professor Doctissimus;" "M. & J.U. Professor." At that time the term Professor was understood in two senses:—as synonymous with Doctor, of which it is still the proper academic Latin equivalent (*e.g.* S.T.P., *Anglicè* D.D.); and as designating a man who was qualified by competent authority to teach any particular branch of knowledge. The Public Professor was the university officer in the modern English sense of the term, and corresponded with the "Professor Ordinarius" of the foreign universities.[a] The "Professor Extra-ordinarius" of these universities was the same as the Private Professor, or licensed teacher, and was somewhat like our resident masters or superior grinders—*Anglicè* "coaches." Thus a man like Stearne, having a forensic taste, would have been made Public Professor of Laws, and afterwards he might change it for a Public Professorship of Medicine.

He was Public Professor of Medicine anterior to his appointment to the Hebrew Lectureship; for, in the instrument announcing his election to Henry Cromwell, he is styled "Medicinæ Doctorem et Professorem Publicum." There were then but two lay Fellows in T.C.D. One, the Civilian or Jurista, in right af his office was Public Professor of Laws, and the other, Medicus, was Public Professor of Medicine in like manner. In *Bedell's Statutes* (Cap. XVII.) these fellows are styled "Professores Jurisprudentiæ et Medicinæ;" but in the latter case, with two exceptions, the offices of Medicus and Public Professor of Medicine have not been held by the same individual since 1660.[b]

During this time Stearne enjoyed extensive practice, which he seems to have obtained easily enough; for in three years and a-half from his return to Dublin he had sufficient influence with Provost Winter and the Board to obtain the following favour:—

"We, the Provost and Senior Fellows of T.C., near Dublin, at the request of John Stearne, Senr. Fellow of the said College, do, for and in

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[a] One of Stearne's works (Manuductio) refers to the opinions of Adrian Heereboord, of Leyden, "Philosophiæ Professoris Ordinarii."

[b] These two exceptions were Stearne himself, and Richard Helsham, M.D., appointed Professor of Physic in 1733. The Professorship was founded in 1637.

consideration of the said John Stearne's practice in Physic, hereby give and grant unto the said John Stearne full liberty to lye in the City of Dublin, or elsewhere, whensoever, in his discretion, his Physical employments shall require his absence any night from the College. In witness whereof we have subscribed our names, this 22 May, 1655. Sam. Winter, Prœp. Joseph Travers, V.P. Nath. Hoyle. C. Williamson. Adam Cusacke."—(*Barrett MSS.*, p. 288.)

COLLEGIATE SYSTEM IN THE UNIVERSITY AT THIS TIME—TRINITY HALL.

The earlier Provosts of T.C.D. were mostly Cambridge men; and, through their influence, various attempts were made to introduce into Dublin the English system of many colleges in one university. On Feb. 19, 16$\frac{39}{40}$, two buildings, called in the language of the day "mass houses," in Bridge-street were given by the Lords Justices to T.C.D. for this purpose. Each was constituted a Hall in the university, and had a master and scholars (*Barrett MSS.*, 188); but some time after they were given up as collegiate institutions, for want of funds. In Back-lane was another building of the same kind, of which Borlace, an Irish physician, who practised at Chester, copying from Fuller's *Church History*, thus writes:—"For many years the University was confined to this Colledge [T.C.D.]; since, it hath been enlarged by some adjacent Tenements, whereof (of late) one is converted to a Colledge of Physitians, graced by his Majesty with many Priviledges, and the Mass House in Back-lane, a fair Collegiate building, was disposed of to the University of Dublin, a Rector and Scholers being placed in it in the time of Chancellor Loftus and the Earl of Corkes being Lords Justices; but whether it so continues I am not certain. I hear it is alienated."[a]— (P. 164). This hall or college in Back-lane was also given up for want of funds, and the organ in it was transferred to T.C.D., where it still stands in the gallery of the theatre (information from Rev. Dr. Todd). Trinity Hall, mentioned by Borlace, did not so soon sink into oblivion. It stood in the centre of Trinity-place, off Dame-lane, where a quadrangular set of buildings on part of the same site still exists, and was originally built for a bridewell; but the design of its erection falling through, as described by Dr. A. Smith (*Early History of the College of Physicians in Ireland*), it came into the possession of T.C.D. in 1616.[b] From that time until 1641 it was properly kept up, but in the general

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[a] This house was afterwards a military hospital, and "Tailor's Hall" now stands on its site.—Census of Ireland for 1851, Report and Status of Disease, p 91.

[b] A copy of the lease or assignment of Trin. Hall to T.C.D., is on p. 236, of the oldest book now among the Coll. Records. This book is bound in vellum, and marked on the cover "11 Very Old Accounts." Inside is written "Thomas D'Olin, Generosus Dono dedithunc librum in usum fraternitatis Anlæ Trinitatis, die 14to Julii, 1664." It contains the Coll. accounts to 1705, besides records of elections to offices and fellowships.

confusion of the civil war was much neglected ; and, having been forsaken by the students, " was by poor people occupied, and in a manner ruinated,"[a] About the year 1654 the corporation threatened to resume possession of the hall, which they had power to do in case it should cease to be used for college purposes, but Dr. Stearne, who was evidently a public man of note at this time, proposed to the Provost and Fellows that he should be constituted President of Trinity Hall for life, and be allowed to lodge there on condition (*inter alia*) of repairing it at his own cost, and converting all of it, save his own lodgings, to the use of physicians. By this arrangement T.C.D. had the appointment of the President of Trinity Hall, and the persons accommodated there were styled " The President and Fraternity of Physicians."

During the ensuing six years Trinity Hall remained in *statû quo*, nor do I find that any steps were taken during this interval to accomplish the avowed object of Dr. Stearne and his fraternity, viz., the incorporation of a College of Physicians in the University of Dublin.[b]—(See *Barrett's MSS.*, p. 65).

This idea had existed before Stearne's time, and the usefulness of the project was occasionally discussed, not only as a professional matter, but as an educational one which very much concerned the interests of the university.

In 1628 Provost Bedell[c] wrote a letter from London to Archbishop Ussher (*Parr's Life of Ussher*, p. 387), in which he observed :—" At my being in Dublin, there came to me one Dr. De Laune, a Physician bred in Emanuel College : Who in speech to me discovered their purpose to procure a patent like to that which the College of Physicians hath in London. I noted the thing, and partly by that occasion, and partly also the desire of the Fellows to extend their time of stay in the College.[d] I have drawn a plot of my thoughts in that behalf, which I send your Grace herewith."

In another letter written in 1628 to the same prelate, Provost Bedell says :—" I suppose it hath been an error all this while to neglect the faculties of Law and Physic, and attend only to the ordering of one poor College of Divines ; whereas with a little more labour and a few privileges attained, a great many more good wits might have been allured to study."— (*Op. supr. cit.*, p. 391.)

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[a] Barrett's MSS., p. 65.

[b] In Taylor's History of the University of Dublin (Lond., 1845), opposite to the title page is an engraving of the old-fashioned gown of an M.A., or Fellow of T.C.D. It is of the same pattern as that still (Nov. 1864) used by certain office bearers of the College of Physicians.

[c] B.D., afterwards Bp. of Kilmore. He first procured the Old Testament to be translated into Irish. See his life by Bp. Burnet.

[d] Fellowships were then only tenable for a term of years.

The obvious meaning of these remarks is, that Bedell, seeing that while degrees in all faculties were granted by the university, the education of theological students was only attended to, conceived the idea of separate colleges for the other faculties. In these colleges the students would have tuition in arts, and also professional teaching. On the medical side of this question, Dr. De Laune was evidently a leading man, and from what follows it will appear that the project which Stearne carried out successfully was originated by the other.

Dr. De Laune was elected a fellow of the London College of Physicians in 1618, one year after its re-incorporation by King James I., and was physician to the Lord Deputy of Ireland at the time of his interview with Bedell. It was evidently by his exertions that King Charles I., on the recommendation of the Lord Deputy, Viscount Falkland, issued a royal letter for the incorporation of a college of physicians. This design was probably frustrated by the return of Dr. De Laune to London, and his permanent abode there for many years after 1642, when he was appointed an "Elect" in the London College.[a] The civil war further prevented Stearne or any one else from obtaining the charter.

Stearne doubtless had before him the letter of King Charles I. This document, the earliest I have heard of respecting the College of Physicians, is copied into one of the existing volumes of its records. This volume I shall quote as *Sir Patrick Dun's Book*; it is described on the cover as "Colledge of Physicians, 1693," and inside is this inscription: "The guift of Dr. Patrick Dunn (First President) to the King and Queen's College of Physicians in Ireland." The royal letter[b] runs thus:—

KING CHARLES THE FIRST'S LETTER.

" Charles Rex,

" Right trusty and wel-beloved Cossen and Councello^r, Wee greete you well.

" The Zeale which our late deare ffather of blessed memory hath always had to reduce that our kingdom of Ireland to Civility and to an uniforme manner of Governm^t. with this our Realme of England, whereby the same may fflourish to the glory of God, our honour, and the benefitt and comfort of all our Subjects and Inhabitants is not unknowne nor can be hidden from so many as have observed the Sundry Alterations tending to that perfection to which the same hath attained since the beginning of our said father's Reigne. For the better effecting whereof our Ffather was daily Studious to establish in the said kingdom such laudable and profitable things for civill Adm^{rton} as might not onely conforme the same to the President of this Our Realme of England, but also to propagate and advance the honor and estimation of that our Kingdom, Wee

[a] For a memoir of Paul De Laune, M.D., see Munk's Roll of the Royal College of Physicians of London, Vol. i., p. 160. (Lond., 1861.)

[b] This letter is printed in Gilbert's Hist. of Dublin, Vol. iii., p. 9.

therefore in imitation of so Royall an Example have now taken into our consideration that the Establishing and practice of Learning and humane Sciences is not a little available thereunto, and amongst others that laudable and most necessary Art of Physick the Practise whereof, as We are informed, is daily abused in that our Kingdom by wandring Ignorant Mountebanks and Empyricks, who for want of restraint do much abound to the daily impaireing of the healths, and hazarding of the Lives in generall of our good Subjects there, For the Reformation of which abuse, Wee think it fitt upon your recomendation, and hereby doe require and authorize you with the advice of some of our learned Councill there, by Letters Patents to be made and past from us our Heires and Successors under the great Seale of that our Realme, To erect in our citty of Dublin in that our Kingdom a Colledge Society & Corporation of Physicians according to the Rule and forme of the Charter heretofore granted to the Physicians in our City of London for the incorporating of them, And also to have all and every such Articles and Priviledges in as ample and beneficiall manner as the Physicians of our Citty of London doe now lawfully enjoy by virtue of any Act of Parliament or Letters Patent And moreover to Erect the said College Society & Corporation of Physicians by such name of Foundation, and to be a body consisting of such and so many persons to be incorporated by such names as to them the said Physitians shall seem meet, to have a ppetuall Continuance and Succession, With license and authority to them and their Successors for the better maintenance of the said Colledge and Society to purchase Manors Lands Tenements and Hereditaments in that our Realme in Mortmaine, not exceeding the yearly value of Forty pounds per annm Irish, To be houlden of us our Heirs and Successors as of our Castle of Dublin in ffree and comon Soccage, and not in Capite, nor by Knights Service, and likewise to purchase to them and their Successors Goods and Chatteles Reall and Personal, And our further pleasure is to give power to the said Society & Corporation of Physician[s] to make such Laws and Ordinances for the Governmt. and Well ordering of the said Colledge and the persons Members of that Colledge and professing Physick within that Citty and Twenty miles thereof, and of the Revenues and possessions thereof as they from time to time shall think fitt, or as the Colledge of Physicians in England may lawfully doe, and that the said Society & Corporacon may alter or abrogate the said Laws or Ordinances, or any of them, and to make new to the same effect as they shall think good, So as the same be not repugnant to the Laws and Statutes of that our Realme, And these our Letters shall be as well unto you our Deputy and Chancellor there now being, as to any other Deputy Chief Governor or Governrs. Chancellor or Keeper of the great Seale of that our Kingdom which hereafter for the time shall be and to all other our Officers and Ministers there to whome it shall or may apperteyne, and to every of them sufficient warrant & discharge in that behalf, Given under our Signett at our

Pallace of Westminster the fifth day of August in the Second yeare of our Reigne [1626].

" To our Right Trusty and Well-beloved Cousin and Councellor the Lord Visc*t*. Falkland our Deputy Gen*ll*. of our Realme of Ireland, and to our Chancellor there now being, and to any other Deputy Chief Govern*r*. or Govern*rs*. Chancellor or Keeper of the Great Seale of that our Kingdom which hereafter for the time shall be, and to all other our Officers and Ministers there to whom it shall or may apperteyne, and to every of them."

" A true copy.

" R*D*. WALLIS,

" *Clerke of the Rolls.*

" *Copia vera.*"

DR. STEARNE'S POSITION AT THE RESTORATION.

On the restoration of the monarchy in 1660 none of the fellows then in possession at T.C.D. were found to have any statutable position, and accordingly, by a King's letter dated Whitehall, 29th December 1660, several nominations were made to the vacant fellowships.

If the high party spirit of those times be taken into account, it must be concluded that Stearne had all along played his part well, for with Joshua Cowley, Richard Lyngard, Patrick Sheridan, and William Vincent, he was appointed a senior fellow by the King's letter above mentioned, and immediately after was elected Public Professor of Laws. He also, being a married man, obtained a dispensation from the statutes respecting the celibacy of fellows.---(See *University Calendar*, and *Taylor's History of the University of Dublin*.)---He married in 1659,[a] Dorothy, daughter of Charles Ryves, Esq., and she survived him.[b]

DR. STEARNE'S SON JOHN.

He had an only son, who afterwards attained to great eminence; he was born in 1660, and his name was John. He was the predecessor of Swift in the Deanery of St. Patrick's, from which he was promoted to the See of Dromore, and finally, in 1717, to that of Clogher. He was elected Vice-Chancellor of the University in 1721, founded and endowed the University Printing House in 1734,[c] and died unmarried 6th June 1745, leaving

[a] Monck Mason's Hist. of St. Patrick's Cathedral, p. 229.

[b] Annexed to his posthumous work " De Obstinatione" is an Elegy on him by Robert Maxwell, Bishop of Kilmore. In this she is *named* as surviving him. She was alive in 1677; for under the date October 24, in that year, among " Recepta Dris. Crosby [Registrarii] durante sus ministerio," I find the following entry in *D'olius Book* (already described in a note as " 11 very old accounts") " De vidua Sterne pro reditu semi annuo domus hujusce [Trin. Hall] £03 01 03."

[c] The inscription over the entrance of the printing house is as follows :---" R. R. Johannes Stearne, Episcopus Clogherensis, Vice cancellarius hujus Academiæ pro-benevolentia quam habuit in Academiam et rem literarium. Posuit 1734." See notices of him in Harris' Ware, Cotton's Fasti Ecclesiæ Hiberniæ, Mant's History of the Irish Church, and Sir W. Scott's Life and Writings of Swift.

by his will annual endowments to many religious and charitable institutions in this city. Among these I may specify Steevens' Hospital, Mercer's Alms Houses, the Lying-in Hospital, the Blue Coat Hospital, Swift's Hospital, and the residue to the support of blind children.[a] He also left £1,000 to build the granite spire of St. Patrick's Cathedral.—(*Mason's Hist. of St. Patrick's*, p. 10.) The Bishop had three sisters, namely, Bridget, Catharine, and Mabella. Of these the eldest, Bridget, m. John Rotton, and had one son, John Rotton, Esq., of Dublin, and four daughters, Bridget, wife of John Hawkshaw, LL.D.; Jane, wife of Thomas Putland, Esq. (ancestor of the Putlands of Brayhead); Frances; and Dorothy, wife of Alderman Henry Hart.

DR. STEARNE'S PROPOSALS ABOUT TRINITY HALL AND A COLLEGE OF PHYSICIANS, IN 1660.

On February 18, 166$\frac{0}{1}$, Dr. Stearne renewed his former proposal to the Board in the following terms :—

" 1. That Trinity Hall, with the land thereunto belonging, may be set apart in perpetuum for the advancement of the study of physic in Ireland.

" 2. That in Pursuance of the said design, John Stearne be constituted President of the said Hall for and during his natural life.

" 3. That the nomination of a President of the said Hall upon Vacancy be always in the Provost and Senior Fellows aforesaid and their Successors.

[a] See acknowledgements of money received from this source in the Annual Reports of St. Mark's Ophthalmic Hospital.

The following is the pedigree of the Stearnes already referred to, corrected by Sir Bernard Burke :—

John Sterne, Clk.══Ann, dau. or sister to Sir Wm. Gilbert, Governor of the Fort of Leix (Queen's County).

John Stearne, of Greenane, Co. Down, officer to Theop., Bp. of Dromore. 1652, and to Hy., Bp. of Down (qui ob., 1661).══Mabel. dr. to Robt. Bermingham, of Ballogh, Co. Dublin, by Margeret Ussher, his wife. — Daur. m. to Handcock. — Daur. m. to Cooke.

Robt. Stearne, of Tullynally, W. Meath; will d. 21 Mar., 1658. pr. 16 April, 1660.══Ann, dau. to Sir John Stephen, of Finglass; her will dat. 1707, proved May, 1708. — James Stearne, Archdeacon of Limerick, mar. Agnes Kerr, and had a daur., Abigail, wife of Hugh Kerr, and other issue. — John Stearne, M.D. & F.T.C.D.,══Dorothy Ryves, daur. of Charles Ryves, Esq., Examiner in the Chancery of Ireland: Will proved 27 May, 1700.

John Stearne, Bp. of Clogher. Bridget m. John Rotton, of Dublin, Esq. Catherine m. Francis Kelly. Mabella m. Thomas Hall.

Robert Stearne, Major General, Governor of Royal Hospital, Dublin; will proved, 1732. ob. S. P.══Elizabeth, daur. to Timothy Tuckey, Alderman of Cork; will proved 1739. — John Stearne, Clerk.══Anne. m. to John Coddington — Mabel. m. to Richard Tighe. — Eliz- m. Brunton. — Elinor, m. to Matthew Smith. — Fridiswide.

Mary Anne Jane Eliza.

" 4. That the said John Stearne may accommodate himself with gardening upon the ground belonging to the said Hall, and with Chambers out of the present building, or out of such as shall hereafter be raised upon the ground unto the said Hall appertaining.

" 5. That the President of the said Hall shall call into a fraternity able Physicians, who, together with him, are desired to endeavour to advance moneys for additional buildings to the said Hall, and to procure a Charter for to be a body corporate with privileges.

" 6. That all students of physic in the said Hall shall, until the President of the said Hall and the fraternity thereof be made a body corporate by Charter, be bound to come to prayers in Trinity College aforesaid, and to perform Exercises there, according to their several capacities.

" 7. That the President and fraternity shall, if demanded, meet to consult upon the best means for the recovery of the Provost and Senior Fellows aforesaid, or their Successors, whenever any of them shall happen to be sick.

" 8. That no students be admitted into the said Hall, but such as are first admitted or incorporated into Trinity College aforesaid.—John Stearne."—(*Barrett's MSS.*, p. 68.)

These proposals were approved of by the board, and a legal instrument according to the tenor of them, was duly executed on 22nd February, 166$\frac{0}{1}$. This was soon cancelled, probably because of some informality, and a new deed was sealed and signed 22nd April, 1661.

On the 19th March, 166$\frac{0}{1}$, the board decreed, on account of Stearne's practice of physic, and the remoteness of Trinity Hall from Trinity College, Dublin, that "he shall not be penally obliged to be present at Coll: prayers, unless he be thereunto specially required, and that he receive his Commons in money."[a]

Under the date 1662, June 3, Dr. Barrett writes :—" Dr. John Stearne constituted and elected Public Professor of Medicine in the University of Dublin for and during his natural life, he was sworn by the Vice-Chancellor June 4th."

Stearne having accomplished his purpose respecting Trinity Hall, now set himself to procure the charter. Here, however, he met with delay ; but at last, on the 8th of August, 1667, the physicians received the long promised letters patent.

This charter has never yet been published either in English or in Latin ; and as it is a document of considerable importance, and withal is comparatively short, I shall here set it down as copied from " Sir Patrick Dun's Book," p. 27. The original is not in the possession of the College, having been surrendered previous to obtaining the Charter of William and Mary in 1692.

[a] Barrett's MSS.

CHARTER OF KING CHARLES II.[a]

" CAROLUS SECUNDUS Dei Gratia Angliæ Scotiæ Franciæ et Hiberniæ Rex Fidei Defensor etc OMNIBUS ad quos presentes Literæ nostræ pervenerint Salutem. Cum Regii Officii nostri munus arbitremur Ditionis nostræ hominum felicitatem omni ratione consulere, et ad hoc apprime necessarium est indocti Artis Medicinæ Professores supprementur, et periti in hac arte foveantur et incitentur. Ac Superind Collegium perpetuum gravium et doctorum vivorum,[b] qui Medicinam publicè exerteant in Civitate nostræ Dublin in dicto Regno nostro Hiberniæ et per spacium[c] septem miliarium a dicta Civitate undequaque versus Institui volumus.

" SCIATIS igitur quod nos de gratia nostra speciali ac ex certa scientia et mero motu nostris, Necnon de advisamento et consensu predilecti et perquam dilecti Consanguinii et Consiliarii nostri Jacobi Ducis Ormondiæ Locumtenentis nostri generalis ac generalis Gubernatoris dicti Regni nostri Hiberniæ ac juxta tenorem et effectum quarundam Literarum nostrarum manu nostra propria signatarum et sub Signeto nostro datarum apud Curiam nostram de Whitehall Vicessimo Octavo die Junii Anno Regni nostri Decimo Septimo et nunc in Rotulis Curiæ nostra [æ] Cancilariæ dicti Regni nostri Hiberniæ Irrotulatarum.

" DEDIMUS Concessimus Constituimus et Ordinavimus quod Johannes Stear[n]e, Medicinæ Doctor, Gulielmus Petty Miles, Edvardus Dynham, Abrahamus Yarner, Josephus Waterhouse, Gulielmus Currer, Robertus Waller, Thomas Margetson, Nathaniel Henshaw, Samuel Sciclamore, Jeremias Hall, Carolus Willoughby, Johannes Unmusique, et Johannes Cusacke, Omnes Medicinæ Doctores, de cetero siut et erunt vigore presentium in re facto ac nomine unum Corpus corporatum et Politicum et Communitas perpetua sive Collegium perpetuum per nomen Præsidentis et Sociorum Collegii Medicorum in Dublin, et eos per nomen Præsidentis et Sociorum Collegii Medicorum in Dublin, in unum Corpus Corporatum et Politicum in re facto ac nomine realiter et ad plenum pro nobis Heredibus et Successoribus nostris erigimus, facimus et ordinamus, et Creamus per presentes. Et quod per id nomen habeant Successionem perpetuam et siut et erunt perpetuis futuris temporibus personæ habiles et in Lege capaces ad habendum perquirendum recipiendum et possidendum absque aliqua licentia inde a nobis Heredibus et Successoribus nostris in hac parte obtinenda : Terras Tenementa et Hereditamenta quæcunque non exedentia[d] annuum Valorem Centum librarum Sterl. per annum.

a In Sir P. Dun's Book this charter is written in contracted Latin.
b Vivorum, error for " virorum."
c Spacium for " Spatium."
d Exedentia for " excedentia."

" Ac Ulterius de gratia nostra speciali ac ex certa Scientia et mero motu nostris Necnon de Advisamento et consensu prædicto, facimus constituimus et ordinamus prædictum Johannem Sterne primum et moderum[a] Præsidentem Collegii sive Communitatis prædictæ ad Supervidendum recognoscendum et gubernandum Collegium sive Communitatem prædictam et omnes homines ejusdem facultatis Existentes Membra Collegii prædicti et negotia eorundam : continuandum in eodem Officio durante Vita Sua naturali, constituimus : etiam ac declaramus quod post mortem prædicti Johannis Sterne Præpositus Socii et Scholares Collegii sanctæ et individuæ Trinitatis juxta Dublin pro tempore existentes pro eo quod obligarunt se dare stabilire et disponere Aulam communitatis vocatam Trinity Hall, cum Terris eidem spectantibus ad usum dictæ communitatis sive Collegii Medicorum, quod ipsi et eorum Successores de tempore in tempus quoties opus fuerit valeant et possint singulis annis in perpetuum post mortem dicti Johannis Stearn, eligere de Communitate et Collegio Medicorum prædicto, talem providum virum et in facultate medicinæ expertum quales Approbatus fuerit per Locumtenentem nostrum generalem aut Deputatum, vel alium Capitalem Gubernatorem vel Gubernatores dicti Regni nostri Hiberniæ pro tempore existentes fore, Præsidentem ejusdem Collegii sive Communitatis Medicorum prædictæ ad Supervidendum recognoscendum et gubernandum Collegium sive Communitatem Medicorum prædictam pro uno Anno integro, et omnes homines ejusdem facultatis existentes Membra Collegii Medicorum prædicti et negotia eorundam. Et quod Præsidens et Collegium sive Communitas Medicorum prædictum habeant Commune Sigillum Negotium dictæ Communitatis et Præsidentis in perpetuum Serviturum ; Et quod ipsi per nomen Præsidentis et Sociorum Collegii Medicorum in Dublin placitare et implacitari possint coram quibuscunque Judicibus in omnibus Curiis nostris et Actionibus quibuscunque. Et Ulterius volumus et per presentes pro nobis Heredibus-et successoribus nostris Damus et concedimus præfato Præsidenti et Sociis Collegii Medicorum in Dublin et Successoribus suis in perpetuum plenam potestatem et Authoritatem de tempore in tempus eligendi talem personam vel personas Medicinam profitentes, quod ipsi vel major pars eorum quorum Præsidens dicti Collegii Medicorum pro tempore existens unum esse volumus, cum approbatione Locumtenentis nostri generalis aut Deputati vel alius Capitalis Gubernatoris vel Gubernatorum dicti Regni nostri pro tempore existentis Aptos esse judicabunt fore Membra aut Socios dictæ Communitatis sive Collegii Medicorum prædicti. Ac Ulterius de uberiore[i] gratia nostra speciali ac ex certa Scientia et mero motu nostris necnon de advisamento et consensu prædicta, Dedimus et concessimus et per presentes pro nobis Heredibus et Successoribus nostris damus et concedimus præfato Præsidenti et Sociis Collegii Medicorum in

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[a] Moderum for " Modernum."

Dublin prædicti et Successoribus suis in perpetuum, quod ipsi et Successores sui Congregationes licitas et Honestas de Seipsin in Aula prædicta communiter vocata Trinity Hall aut alibi (toties quoties opus fuerit) habere tenere et convocare possint, et talia Statuta et Ordinantia pro salubri et meliori gubernatione Collegii sive Communitatis Medicorum prædicti facere stabilere[a] et ordinare qualia approbata fuerint per Locumtenentem nostrum generalem aut Deputatum vel alium Capitalem Gubernatorem vel Gubernatores et Concilium dicti Regni nostri Hiberniæ pro tempore existens. Et quod in dicta Civitate et per Spatium Septem miliarum a dicta Civitate undequaque Versus, Nullus exerceat dictam Facultatem Medicinæ nisi ad hoc prædictum Præsidentem et Communitatem Collegii Medicorum prædictam sive Successores eorum qui pro tempore fuerint admissus sit per Literas Testimoniales sub Sigillo communi dicti Præsidentis et Collegii Medicorum Sigillatas, Sub pœna forisfactura Centum Solidorum Sterl. pro quolibet meuse in quo ipse qui sit non admissus est eandem Facultatem Medicinæ exercuit intra meta et loca prædicta unam medietatem inde nobis Heredibus et Successoribus nostris solvendam et aliam medietatem Præsidenti Collegii Medicorum pro tempore existenti. Ac ULTERIUS de uberiori gratia nostra speciali ac ex certa Scientia et mero motu nostris Necnon de advisamento et consensu prædicta, dedimus et concessimus ac per presentes pro nobis Heredibus et Successoribus nostris damus et concedimus præfato Præsidenti et Sociis Collegii Medicorum in Dublin, et Successoribus suis in perpetuum, quod hæ literæ nostræ Patentes et quilibet Articulus et Clansula in eisdem contentus vel Irrotulamentum earundam sint, construentur, interpretentur et adjudicentur in maximum advantagium beneficium et favorem præfati Præsidentis et Sociorum Collegii Medicorum in Dublin prædicti et Successorum suorum, erga et contra nos Heredes et Successores nostros, tam in omnibus Curiis nostris infra Regnum nostrum Hiberniæ quam alibi ubicunque absque aliqua confirmatione licentia vel toleratione imposterum a nobis Heredibus vel Successoribus nostris procuranda seu obtinenda Non obstante quodam Statuto edito in Regno nostro Anno Septimi Regni Regis Edwardi Primi de Terris in menu mortuam[b] non alienandis, &c., Non obstante alio Statuto edito apud Westmonasterium in Anno decimo octavo regni Regis Edwardi Primi vocato Statuto quia Emptor Terrarum et non obstante aliquo alio Statuto Acto Ordinatione sive Provisione aut aliqua alia re causa vel materia quacunque in contrarium non obstante PROVISO semper quod præfati Præsidens et Socii Collegii Medicorum irrotulabunt vel irrotulari causabunt has Literas nostros,[c] Patentes in Rotulis altæ Curiæ nostræ Cancellariæ, in dicto regno nostro

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[a] Stabilere for "Stabilire."
[b] Menu mortuam for "manu mortuam."
[c] Nostros for "nostras."

Hiberniæ infra sex meuses proximas post datum harum literarum paten-
rium, Eo quod expressa Mentio de vero valore Annuo aut de Certitudine
prœmissorum seu eorum alicujus, aut de aliis donis sive Concessionibus
per nos vel per aliquem Progenitorum nostrorum eidem Præsidenti et
Sociis Collegii Medicorum prædicto ante hac factis in præsentibus minimè
factis existit; Aliquo Statuto Acto Ordinatione sive Provisione aut aliqua
alia re causa vel materia quacunque in contrarium prœmissorium facto
in aliquo non obstante, Volumus etiam ac per præsentes pro nobis Here-
dibus et Successioribus nostris damus et concedimus eidem Præsidenti et
Sociis Collegii Medicorum prædictis quod habeant et habebunt has literas
nostras Patentes sub magno Sigillo nostro Hiberniæ debito modo factas et
Sigillatas absque fine magno vel parvo proinde nobis in Hanaperio
nostro vel alibi ad usum nostrum reddendum Solvendum seu faciendum.
IN CUJUS rei testimonium has literas nostras fieri fecimus Patentes: Teste
præfato Locumtenente nostro generali et generali Gubernatore nostro
Regni nostri Hiberniæ prædicto. Apud Dublin Octavo die Augusti Anno
Regni nostri decimo nono."

THE CHIEF PROVISIONS OF THE PRECEDING CHARTER.

From the contents of this charter it seems that a King's letter such as
that issued by Charles I. was written from Whitehall on the 28th of
June, 1665, and enrolled in the Irish Court of Chancery. More than
two years after ("on the 8th day of August, in the 19th year of our
reign") the provisions of the King's letter were embodied in the charter,
which, *inter alia*, ordained that Dr. John Stearne and thirteen other
doctors of medicine, of whom the celebrated Sir William Petty was one,
should be constituted fellows; that Stearne should be the first president,
and should hold that office for life; that the college should have jurisdic-
tion over practitioners in physic in Dublin and within seven miles thereof;
that no person should practise medicine within these limits without the
license of the college, under a penalty of one hundred shillings for each
month of unlicensed practice; that the college might have a common seal;
might sue and be sued in courts of law; might acquire property to the
value of £100 per annum; might meet as often as they chose, and make
bye-laws, and elect fellows subject to the approval of the Lord Lieutenant
or his Deputy. After the death of Stearne his successors in the presi-
dency were to be elected by the Provost, Fellows, and Scholars of Trinity
College, provided they settled Trinity Hall and the lands belonging to it
on the College of Physicians; the election of the president was to be
confirmed by the Lord Lieutenant.

TRINITY HALL, COLLEGE OF PHYSICIANS, AND TRINITY COLLEGE, DUBLIN.

Dr. Stearne having now procured the charter agreeably to his engagement with the Provost and Fellows, made an application to them that Trinity Hall, which had been previously granted to him in trust, " might be by Council learned in the Law settled upon Matt. Barry and Launcelot Sandes, Esq., for the sole use of the Coll: of Physicians." This was done on the 13th of August, and on the 9th of September, 1667, it was recorded :—" The said P. F. and Scholars do hereby declare that the said John Stearne hath fully discharged the trust in him by the said instrument reposed, and order this their declaration to be Entered in the Registry."—(*Barrett's MSS.*, 65–70.) In the deed of settlement of the 13th August, one of the original articles (No. 7) which had been omitted from the charter was again agreed upon in these terms :—" And they (the Provost, Fellows, and Scholars) provide that the said President and Fellows of the Coll: of Physicians and their successors shall, when demanded, meet and consult, without fees, upon the best means for the recovery of the Provost and Sen. Fellows of T. C. and their Successors, whenever they or any of them shall happen to be sick or diseased."—(*Barrett's MSS.*, p. 70.) It does not appear why they who were least able to pay physician's fees, *i. e.*, the Junior Fellows and Scholars, were excluded from the benefits of this bargain.

The question now occurs :—" In what position was the College of Physicians with respect to Trinity College and the University ; was it an independent Collegiate Corporation, or was it a College in the University ? I may best answer this by giving the following extract from *Barrett's MSS.*, which shows the light wherein this question was regarded a few years after the incorporation of the College of Physicians.

James Kyan became a senior fellow in 1671, and, as Dr. Todd notes in the margin of the MSS., it was subsequently to that date that he recorded a short account of the foundation of the College of Physicians.[a] In this account, having described the accomplishment of Stearne's wish in obtaining the charter, and his discharge from the trust reposed in him by Trinity College, Dublin, he goes on to say :—" So that the full intent and purpose of the conveyance of Trinity Hall and of the ground thereunto appertaining is completely executed. For Trin. Hall now is a College Hall in a twofold sense. Either of which doth better intitle Trin. Hall to be called a Coll. Hall than any use unto which formerly it hath been employed. It is now a Coll. Hall, because it is an Hall to a Coll. of Physicians, which are more considerable than a small

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[a] From the contents of this document, it appears that it was written during Stearne's lifetime ; and, as he died, 18th November, 1669, it is plain that it was written, if not registered, before that date.

number of undergraduates. It is now an Hall also to Trin: Coll: because Trin: Coll: hath the nomination of a President thereof for ever: which alone makes it more a Coll. Hall than the residence of a few Freshmen and Sophisters, which formerly were intertained therein, and of whom it hath been observed, that generally they miscarried by reason of the remoteness of Situation from Trin. Coll., under whose government they were. Trinity Hall is not alienated from Trinity College; but by them converted into the use intended. And it may be considered that after the death of the said John Stearne and perhaps before, there will be accommodation for students of the Coll: of Physicians and [they] are as considerable a portion of scholars as any number of Undergraduates wherewith the said Hall was heretofore stored, and as useful to the whole Kingdom. Lastly, Trin: Hall is at present in nowise fit to entertain the actual students of Trin: Coll: for there are now so many buildings interposed betwixt it and Trin: Coll: that it is not possible in Trin: Hall to hear Trin: Coll: Bell, by which the actual students thereof are summoned hourly almost to Divine service, Meales, and Exercises: not to mention many inconveniences and interruptions that must naturally happen by often [going] backward and forward upon the account of prayers, Meales, Lectures, Disputations, other Exercises and public meetings, and to pass by the danger of young men's residences near suspected places. James Kyan, Registrarius."

From this document it is plain that shortly after the incorporation of the College of Physicians there were numerous medical students belonging to it who could not be accommodated in Trinity Hall because the President resided there; and it is not improbable that on Stearne's death the intention already referred to was carried into effect. There were undergraduates there seventeen years after the grant of the premises for medical purposes, and two years after the college had obtained the new charter of William and Mary. Dr. Barrett records the appointment of a tutor in arts thus (p. 74):—" July 9, 1694, Sir Smith chosen master of the school in Trinity Hall." However, at or shortly after this time the hold of the Physicians on Trinity Hall had been given up,[a] and it became so entirely alienated from educational purposes, that the discovery of its site in our own day required the searching powers of the antiquary.[b]

[a] The next entry on the same page is " Nov. 21, 1694. Lease ordered of Trin. Hall for 41 years to Math. Shaw." The last notice of it by Dr. Barrett is " 24th Jan., 1710, two leases to Dr. Jn. Barton, of Trin. Hall perfected for 40 years."

[b] See in Dr. A. Smith's " Early History, &c.," an account of the differences between the two colleges which led to the alienation of Trinity Hall. In the book already described in a note as " 11. Very Old Accounts," (and which I shall here call " D'Olin's book"), among the accounts, 1680–83, is this entry of a receipt :—" De Collegio Trinitatis juxta Dublin pro resignatione Aulæ Trinitatis, £070·00s.·00d." This meant the cancelling of the deed of 1661, which, according to Barrett's MSS., occurred in 1680, when new terms were agreed to. " A portion of its site is occupied by the Alms House of St. Andrew's Parish."—Gilbert's Hist. of Dublin, p. 17, Vol. iii.

COLLEGE ARMS.

Beside the letter of Charles I. and the charter of Charles II., there is but one other document of this period in the college archives.[a] This is the original certificate of a grant of arms, which was made to the college in accordance with a provision in the charter for the use of a common seal. The document in question is now framed in the College Hall; it begins with a depicted emblazonry of the arms, and runs thus:—

The emblazonry occupies this position in the original.

The following is a description of the Arms of 1863, which (as will presently appear) are nearly the same as those of 1667 :—"Per Fesse Ermine and Azure, a dexter celestial Hand issuing out of clouds in Chief proper, and in base the Harp of Ireland ensigned with the Royal Crown, all also proper, for motto, RATIONE ET EXPERIENTIA." Dated 9th November, in 27th year of Queen Victoria.

"To all and singular as well Nobles and Gentlemen as others, to whom these presents shall come Richard St. George, Esq., Ulster King of Armes of all Ireland, sendeth greetinge, Know yee that whereas his Majestie by his Royall Charter bearing date the 8th day of August in the nineteenth year of his Reigne, was gratiously pleased to make constitute and Appoynt a Colledge of Physitians, within the Citty of Dublin, and for their greater incouragement and advantage, was further pleased to graunt them to be a Corporation and free Community for Ever, as in and by the said recited Charter doth and may more largely appeare. In consideration whereof and being requested by the said College, to assigne to them such Armes as they may lawfully use in publique seale or otherwise without prejudice to any other Persons or bodies Corporate, I have therefore in Complyance to their reasonable request, Assigned to them these Armes following, viz. :—*Party per Fes, Argent, and Azure, in the middle of the Cheife, a Cœlestial hand issuinge out of a Cloud, feelinge the Pulse of a Terrestrial hand, all Proper, in ye Nombrill poynt ye Royall Harpe of Ireland, as a fit distinction from the like Colledge in England, together with this motto Ratione et Experientia as in the Margent above more lively is depicted*, which Armes and Motto, and every part and parcell thereof, I the said Ulster King of Armes of this Kingdom, by the power and Authority annexed to my Office under the Greate Seale of England, do give, graunt, ratify, and confirme, unto the said Colledge and Corporation of Physitians, by these presents for Ever; the same to use, beare, and set forth either in publique seale, or otherwise, without ye let, trouble, or interruption of any person whatsoever. In full testimony whereof, I the said Ulster King of Armes, have hereunto Subscribed my name, and affixed the Seale of my office,

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[a] To this list the volume "11 Very Old Accounts," (D'Olin's book) should perhaps be added.

this Sixteenth day of August, being the nineteenth year of the Reigne of our most Gratious Sovereigne Lord Charles the Second, by the Grace of God, of Great Brittaine, France, and Ireland, King, Defender of the Faith, &c., Annoq Domini One Thousand Six Hundred Sixty, and Seven.—Richard St. George, Ulster Kinge of Armes of all Ireland." (Seal.)

There is no trace of a college seal having been made or used according to the terms of the preceding grant of arms. That it was used, however, up to 1692, when a new charter was obtained, there can be little doubt; but it is highly probable that it was then supplanted by another, of which no trace remains except it be Fig. 1., which, though not found recorded in

Fig. 1   Fig. 2.

the office of Ulster King of Arms, was used up to the present year[a] (1864), when a new seal was substituted for it. Fig. 2. will show this last seal to be a modification of the seal of 1667, which was taken as a model, except in so far as the altered circumstances of the college called for change.

DR. STEARNE'S DEATH AND BURIAL.

Dr. Stearne had now seen the favourite project of his life accomplished, and was the acknowledged head of the medical profession in Ireland. Nothing further can be learned of his public life after this; but as to his private life I shall make some remarks presently. He died in Dublin, on the 18th of November, 1669, at the comparatively early age of forty-five, and was buried in Trinity College, under the College Chapel of that day. Most of the ground contained in the Library square is a disused cemetery,

[a] Fig. 1 was evidently the seal which was made in 1693, according to a design furnished by a Committee appointed by the College for the purpose [Coll. Journal for 1693].

wherein was formerly buried every person who died in the college.   This chapel extended somewhat to the eastward and considerably to the west-ward of the present belfry, and the vaults under it remain intact.   In one of these, to the east of the belfry, Doctor Stearne lies buried, and over him, at the north side of the great altar in the chapel,[a] was placed a marble tablet with this inscription :—

Shield Party per pale. On dexter side three cross crosslets 2 and 1. On sinister, a bend with three lozenges.	P. M. S K A T A P A . E Σ T I . M H . A Π O Θ A = N E I N

Dixit Epictetus Credidit
Johannes Stearne
M & J U D. Collegii SS, & Indiv.
Trinitatis Dublin. Socius. Senior. Collegii
Medicorum ibidem Prœses Primus.   Qui nat
us fuit Arbracchæ xxvi Novemb. 1624
Denatus Dublinii xviii Novemb. 1669   Cujus
Exuviæ. olim. resumendæ. hic depositæ sunt.
Philosophus, Medicus, Summus q; Theologus idem
Sternius hâc, nullus jam requiescit humo.
Scilicet ut regnet, Natura quod edidit unum,
Dividit in partes Mors inimica duas,
Sed modò divisus coalescet Sternius, atque
Ibit ab extremo, totus in astra, die.”

This epitaph was probably written by his former pupil and attached friend, “ the learned Mr. Henry Dodwell,” from whose printed copy of the verses I have supplied the punctuation above given.

When the chapel under which Stearne was buried was taken down, some monuments which were in it were removed to the east side of the quasi chancel of the present chapel, *outside* which they have long been crumbling to decay, and bearing false testimony as to the burial-places of the learned dead.

Along with an altar-tomb supporting a full-length marble effigy of Luke Challoner[b] in the costume of the Elizabethan age, with mural

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[a] “ Epitaphium Marmori insculptum ad latus Boreale magni Altaris in Sacello Collegii S S. & Individ. Trinitatis Reginæ Elizabethæ juxta Dublin, ubi Sepultus jacet.” Prefixed to his posthumous work, “ De Obstinatione,” by the editor, Henry Dodwell.

[b] One of the Fellows of T.C.D. nominated in the Charter of Queen Elizabeth.   Pre-vious to 1608 he preached 1,428 sermons ; of these 397 were on the book of Genesis (and 14 of them on the first chapter), 245 on the book of Deuteronomy, on St. Matthew’s Gospel 210, on the Psalms 147, on the Commandments and Lord’s Prayer 46, and “ on the body of religion ” 67.   Dr. Barrett says of him (p. 15 MSS.) :—

tablets in memory of Provosts Seele[a] and George Browne,[b] and a flat stone which once covered the remains of Provost Baldwin,[c] Stearne's monument was removed, and placed as just described.

REVIEW OF DR. STEARNE'S PUBLISHED WRITINGS.

Dr. Stearne was the author of the following published works :—

1. Animi Medela ; seu de beatitudine & miseria, illius essentia, origine, et ad ipsam methodo, hujus natura causis et remediis tractatus. 4to. Dubl. 1658. (Classed in Library T.C.D. LL. ii. 7.)

2. Θανατολογία seu de morte dissertatio. 8vo. Dubl. 1656 and 1659. (K. o. 19. Library T.C.D. edit : of 1659.)

3. Adr. Heereboordi disputationum de concursu examen. 8vo. Dubl. 1660.

4. Aphorismi de Fœlicitate. 8vo. Dubl. 1654, 1656, and 1664. (EE. n. 50. Library T.C.D. edit : of 1664.

5. De Obstinatione ; opus posthumum, pietatem Christiano-Stoicam, Scholastico more, Suadens ; edente Hen. Dodwell. 8vo. Dub. 1672. (F. o. 1. Library T.C.D.)

6 and 7. De Electione & Reprobatione, and Manuductio ad vitam probam. (In one vol.) Dubl. 1662.

The College of Physicians has not in its library any one of these, the only published works of its founder. T.C.D. possesses those numbered 1, 2, 4, and 5 ; the Bodleian, at Oxford, has numbers 1 to 5 inclusive ; but on searching at Primate Marsh's Library at St. Patrick's Cathedral, I found a complete set, which was bequeathed, with the rest of his books, to that institution by Stearne's son, the Bishop of Clogher before mentioned.

Beside the dedication of his *Animi Medela* already noticed, there is

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"A more laborious and diligent preacher can, I believe, scarcely be found." His daughter, Phœbe, married Archbishop Ussher, and was through her grandmother related to that family, and so to Dr. Stearne. Dr. Barrett says that incense was burned at Challoner's funeral, and that it cost 1s. 6d. His epitaph on the altar tomb runs thus :—

" Conditur hoc tumulo Challoneri tristo cadaver
Cujus ope et precibus conditur ista domus
Obiit 27 Aprilis anno
1613."

" The college as built by him probably consisted of the old monastery [All Hallowes], with considerable repairs and additions."—Barrett MSS.

[a] Died 1 Feb., 167⅓. His monument was in the gallery of the former chapel.

[b] Died 4 June, 1669. His monument was in the ante-chapel of the same building.

[c] Died 30 Sep., 1758. He left all his large estates and £36,000 in money to T.C.D. His monument and picture are in the theatre of the college.

prefixed to it a further dedication to his patron, Henry Cromwell; an address to the reader (before noted); an address to the author from John Leslie, Bishop of Raphoe; a certificate of the orthodoxy of its contents, signed "Gr. [Griffithus] Williams Episcopus Ossoriensis, & Ecclesiæ Cathedralis de Bangor Decanus;" and lastly "Carmen ʻΕυχαριστικοͷ" by Robert Maxwell, Bishop of Kilmore.

The work itself consists of four books, and, like all his works, is written in Latin. It pertains largely to Theology and Mental Philosophy, beside frequent references to Medicine. The idea before him when writing it is laid down clearly in his address "Ad lectorem." He saw, as he thought, the impending ruin of every earthly institution around him, and, coming to the conclusion that the domain of the mind was yet under his control, and that he could be serenely happy, notwithstanding external things, he discusses the best cure ("medela") for the mind under the unhealthy conditions by which it was then effected.[a]

Some idea of its contents may be had by setting down a few of the heads of discourse, *e. g.* :—

Lib. I. cap. 2. Imago Dei in homine.
————————25. An Melancholicorum & dolorantium imaginationes falsæ sunt, & quo modo?
Lib. II. cap. 13. De Providentiâ.
———————— 14. An Malum à bono vel malo oriatur?
Lib. III. cap. 2. An dolor & voluptas consistere possint?
——————— 13. Quid metus sit explicatur.
Lib. IV.[b] cap. 2. Doloris sensitivi natura explicatur.
——————— 3. An dolor sensitivus sit morbus vel symptoma & quod sit ejus subjectum?
——————— 10. De Ecstasi dissertatio."

In his day it was a medical heresy of the worst kind to deny the infallibility of Hippocrates, and accordingly we find him asserting that the father of medicine was one "qui nec fallere nec falli potuerat" (p. 58.)

At p. 450 he relates a curious story respecting a case which came under his observation. A young man was successfully operated on for stone in the bladder; the stone was in one piece, and weighed eleven ounces, yet after six days, during which the urine flowed through the wound, the natural function of the urethra was restored, and the parts healed without suture or plasters. The young man's father, who was

———————
[a] He was now a disciple of the later Stoics.

[b] This book is more directly professional than the others, and abounds in quotations from medical writers.

aged 63, and in robust health, was present at the operation, and became so violently affected by fear of his son's death, that, within twenty-four hours, every hair on his head fell off. Afterwards he complained of extreme heat in his head, was deprived of vision for two hours, and lo! his hair began to bud forth anew.[a]

Stearne's Θανατολογία has much to say to medicine.[b] It is dedicated to the Fellows of Trinity College, Dublin, and is also " Fratri suo charissimo, Roberto Stearne, Centurioni[c] S." He wishes long life to the reader, (Lectori Longævitatem), and prints after this an address to himself from his friend Jeremy Taylor, afterwards Bishop of Down, and twenty-two Latin verses on the author and his work from the friendly pen of " Rob. Kilmorensis." The work itself is composed of twenty-seven chapters or essays of a mixed theological, physiological, and medical nature. Thus in Cap. I. we have a discussion on the utility, necessity, familiarity, and obscurity of death ; Cap. III. explains " Quid sit mors ;" Cap. VI. " Mortis naturalis causa ;" Cap. IX. An vita in æternum prorogari queat? Cap. XIX. De cadavere ; Cap. XX. De Immortalitate Animæ ; Cap. XXI. De Animæ à corpore sejuncta cum viventibus commercio ; Cap. XXIII. Æternitatis pœnarum ratio proponitur ; & quare damnati peccare non possunt ostenditur. Cap. XXV. treats of the eternal beatitude of the soul ; and Cap. XXVI. whether that beatitude admits of degrees.

He discusses the effects of air on the body ; of moist and dry air inhaled and exhaled ; and he thinks moist air highly conducive to long life. He treats of the difference between Aliment and Medicine ; and lays it down as a rule with reference to the former that the body can be

[a] "In Momoniâ Hiberniæ provinciâ juvenis annum trigesimum agens, vesicæ calculo laboravit : ad sectionem deventum est, et lapis extractus, qui unicus fuit, & uncias undecim pendebat. Per sex dies à sectione, urina per vulnus effluxit, dein cursum naturalem repetiit, partes vulneratæ absque suturâ vel emplastris coaluere. In vivis sed valetudinariis est. Illius pater annum agens sexagesimum tertium, robustus tamen, huic periculosæ operationi interfuit : *metu* vehementiori mortis filii sui, capitis pili universi intra horas viginti quatuor defluxere. Dein de ingenti capitis ardore conquestus est, et ad binas horas visu orbatus fuit ö crinis jam repullulat."

[b] The following Imprimatur is signed by Petty, afterwards Sir William :—
" Hauriat vitalem auram elegans De Morte Dissertatio, quâ doctissimus Stearnius noster non modò famam suam morti, sed etiam Universam Naturam Ruinæ surripuit : siquidem in eâ, nihil bonos mores vitiaturum, nihil in Imperium nunc florens insidiarum nec argutias Sacræ Fidei infestas, video.

" Guil Petty
" Cler. Concilii.

" Datum Dublinii)
ex Camerâ Concilii }
ulto Januarii 1658.")

[c] His eldest brother, Captain Stearne, of Tullynally, Co. Westmeath. See notices of him, and of his son, Major-General Stearne, at pp. 116 and 29 of Mr. Caulfield's edition of Dean Davies' Journal ; printed by the Camden Society in 1857.

nourished only by that animal or vegetable which has not but which has had life; that all aliment is essentially liquid, and that the object and aid of nutriment is " *humidi* deperditi restauratio." He treats of the proper use of food (quæ bona quæ prava), and of the fitness of various kinds for various ages. He discourses of the various modes of treating corpses (burning, conservatio inartificialis, artificialis, &c.) and argues the question—does a body grow heavier by death?

He treats of the way of attaining long life, and to this end lauds drinking cold water, taking cold baths, and living in cold climates, as well as inhaling the smell of freshly dug pure earth (odor terræ puræ recens effossæ).[a] As one proof that cold and moisture conduce to long life, he says, " Quæcunque refrigerando, *calidum* nostrum castigant & temperant, eadem *humidum* reddunt minùs dissipabile. Sanguis Elephanti, qui nonnunquam annum ducentesimum complet, est omnium maximè frigidus."

For the same purpose he strongly recommends nitre, ptisans of pearl barley, crocus, " ambra grysea," opium, and tobacco. He quotes Daniel Sennertus to show that the Indians travelled through the deserts without food or drink, or loss of power, subsisting for three or four days by constantly sucking lozenges made of tobacco leaves and pounded river shells (conchylia quædam cochlearum fluviatilium).

The work No. 3 in the preceding list consists of a series of extracts from the works of Adrian Heereboord, Ordinary Professor of Philosophy at Leyden, with a criticism on each. The matter is what I should term Christiano-Philosophical rather than Theological, and Stearne dedicates it " Johanni Rawlino"—" Ex Aulâ Trinitatis Id. Septemb. An. Dom. 1660."

His " Aphorismi de Fœlicitate" are dedicated to the celebrated Viceroy James Duke of Ormond, at that time (1664) Chancellor of the University, and are followed by ten eulogistic verses on the author by John Maxwell, by the customary address " Lectori Salutem," and by fourteen eulogistic verses from the pen of his steadfast friend " Rob. Kilmorensis." In the first section there are discourses on twenty-two aphorisms, of which the following may be taken as fair specimens:—" 3. Est in hominis potestate fœlicitatem adipisci & miseriam devitare, 16 ubi frustrationis periculum, ibi metus. 17 ubi metus, ibi non est fœlicitas." In section ii. there are twenty-three aphorisms, *e. g.*:—" 2. Habenda est ratio valetudinis, voluptatem corporearum, vestitus & domus. 9. Arcana non sunt revelenda. 14. Cui pecuniam mutuemus, cavendum." 21. Multitudinis cedendum. 22. Tempori serviendum. On 14 he remarks, that oftentimes along with the money one loses the friend, and

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[a] Dr. Stokes tells me that, to his knowledge, this opinion long prevailed in the West of Ireland, where invalids followed the plough as it turned up the soil.

on 21, calling the multitude a beast of many heads (" belluam multorum capitum"), he advises against following it or contending with it, that it is safer to yield to it than to fight against it, that if it be hurt, its power will overwhelm the opposer, while if it be yielded to, " ut omnia violenta, paulatim impetus consumitur & exolescit" (p. 138). In section iii., which contains 9 aphorisms, he urges that men are more frequently moved by lesser than by greater evils ; that one who is accustomed to the greater will less mind the lesser, and that it is useful to become accustomed to the greater evils.

There are nine aphorisms in the fourth and last section ; but from his ideas of the " vox populi" and of time service (22 and 21, sec. ii.) it is plain that he knew how to keep well with all parties, and his success in life shows that he did so.

His work " De Obstinatione" was completed shortly before his death, and was edited at his request by Henry Dodwell, who had been his pupil, and who appears to have largely shared in his literary tastes, and in his religious and philosophical opinions. The Dedication is remarkable, and runs thus :—" Viris consultissimis : Praeposito, Sociis et Scholaribus Collegii Sanctae & Individuae Trinitatis Juxta Dublin. Necnon, Sociis Collegii Medicorum, Johannes Stearne, Prioris Collegii Socius Senior, Proeses Posterioris, Hasce lucubrationes, quales quales sint, jure, meritoque dicat, consecratque." As this, his last, and in many respects his most remarkable work, is dedicated to the College of Physicians, I shall give somewhat more than a passing notice of it, premising that there is prefixed to it an elegy of thirty-four verses on Stearne's death, by his life-long friend Bishop Maxwell, who survived him but a short time.[a] This is too long to quote at length, but there are in it these lines addressed to Mrs. Stearne :—

> " Sed tibi continget nunquam Dorothaea Maritus
> Qualis erat donec Sternius ille fuit.
> Sternia, quicquid erit, monitis decede mariti,
> Ne videare tuo bis viduata viro."

Whether by this very personal address (as we should now call it) Mrs. Stearne was recommended to marry again or not to do so, I leave the reader to determine. The treatise " De Obstinatione" I conceive to be Stearne's exposition of what he calls the " Christiano-Stoic Philosophy," and the term obstinatio is to be interpreted to mean—Firmness not sinking under adversities, as expressed in Greek by ἀπάθεια, εὐστάθεια, ἀναμαρτησία.

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[a] He died 16 Nov., 1672. See Cotton's Fasti, &c. (Bishops of Kilmore).

This was the first work published by Dodwell,[a] who, on reading the MS. after Stearne's death, discovered something therein which he thought might be construed to his master's disadvantage. Accordingly he prefixed to it his "Prolegomena," in which he premises that what Stearne urged on heathen recommendation were *moral* duties, and not Arcana Cœli—mysteries of Christianity—which are only known to us by revelation. He proceeds to argue that in other things which concern our practice reason is to be regarded, even where God has superadded a revelation; that in the examination of natural reasoning the authority of the great assertors and indicators of reason challenge our regard; that consequently the philosophers demand our respect; and, having taken up a number of other points of natural theology, he urges that certain phrases in Holy Scripture must be understood in the sense in which they were received by the writers of that age with whom the Hellenists conversed. He shows that when Stearne recommended the sentiments of the Stoics he thereby meant those, not of the ancient Stoical sect, nor of a sect in the Christian Church, but the opinions of the later Stoics, *e.g.*, Seneca, Epictetus, and Antoninus; and that the Christian Church never condemned these, but rather approved them. The later Stoics did not deny Providence, nor maintain fatality, nor doubt the soul's immortality or a future state. They had much regard to reason and its dictates, and chiefly employed themselves in teaching men to lead virtuous lives, and hence were esteemed among Christians. He apologizes for the severity of some of Stearne's maxims, which he explains, and vindicates his doctrine of Firmness (obstinatio) from the charges of Pelagianism and Novatianism.

This work of Stearne's gives a deep insight into his character, and is valuable chiefly for this reason.

His treatise " De Electione & Reprobatione," though more or less

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[a] Henry Dodwell (see his life by Fras. Brokesley, 1715, also Ware's Writers, and Wood's Athenæ, Oxon.) was educated in T.C.D., of which he became a Fellow in 1662. Unwilling to take Holy Orders, he resigned his Fellowship in 1666, and retired to England. In 1688 he was elected Camden Professor of History at Oxford, but, being a non-juror, resigned shortly after the revolution. He died at Shottesbrooke, in 1714, having been through life held in high esteem for his learning and piety, and particularly for his qualities as a Theologian and a Philosopher. He was a very voluminous writer, and when a Fellow of T.C.D. was celebrated as a preacher of "Commonplaces" (Communes Loci) in the College Chapel. This practice, not very long disused, was then highly valued. Every resident M.A., whether clerk or layman, was required, in his turn, to deliver short sermons (ad modum Theologicæ Concionis) on Friday and Sunday Evenings. Nor was the lay practice confined to the college; it was at one time common in Christ Church Cathedral, where Stearne's distinguished grand-uncle first acquired fame as a licensed lay preacher. The Rev. Dr. Carson, F.T.C.D., tells me that he himself discharged this duty when a layman; and that its disuse arose from its practical inconvenience in the present day. "Common-places" could not exceed half an hour in length.—See Caroline Statutes of T.C.D., cap. xvi.

metaphysical, is virtually a theological treatise; and his opinion on this question (which is in keeping with his Christiano-stoic system) may be known from the title of cap. iv., " Æternum & respectivum Dei decretum (quod etiam absolutum est, ut absolutum conditionato opponitur), de aliis salvandis, & aliis damnandis impugnatur."

The preceding is followed by his "Manuductio ad vitam probam," a tractate consisting of twenty-nine essays (in the Baconian sense of the term), and the two, bound in one volume, are dedicated to James Duke of Ormond, and have, added or prefixed, letters from John Leslie, Bishop of Clogher; Jeremy Taylor, Bishop of Down; as also verses from " Rob. Kilmorensis," and " Gu. Hill, S.T.D."

DR. STEARNE'S CHARACTER.

The following summary of his character is given in *Ware's Writers* (p. 159):—" He was a very learned man, and was more fond of the study of Divinity than that of his own profession, in which, nevertheless, he had great knowledge."

After a careful consideration of his writings, and of the spirit of the times in which he lived, I am persuaded that this statement should be received with considerable qualification.

In his day it was not customary for physicians, even when at the top of the professional tree, as we have seen he was, to write medical treatises. They studied and observed much, but wrote little; and what they did write concerning their own profession was frequently on points not connected with practice, and was more generally addressed to literati than to physicians. Much of this undoubtedly proceeded from their firm belief in the infallibility of Hippocrates, and from the confidence then generally reposed in the teachings of the old physicians. Such a persuasion, of course, rendered constant medical discovery of less importance than we are wont to attach to it, and one page of a medical publisher's catalogue of 1864 will be found to contain the advertisements of more books, and, it must be admitted, of more empty pretension and ignorance, than could appear in half a century of the time in which Stearne lived. But it was held not only to be perfectly compatible with earnest and studious attention to the practice of medicine, but to be the proper thing for a learned and successful physician to write on matters extraneous to his profession; and at that time a large number of physicians all over Europe were much given to philosophical and theological pursuits; these studies being considered more or less accessory to medicine.[a] Moreover, the spirit of the age was intensely theological; theological exercises and

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[a] A reference to Munk's Roll of the London College of Physicians will justifiy this and the preceding remarks. There were plenty of able Theologians and Philosophers in the medical profession at this time; and they were mostly eminent physicians.

disputations were essential parts of a University education, and Stearne's academic position, in which, as shown in the case of Henry Dodwell, he had, at some time in his career, to perform the part of a lay preacher, would naturally tend to foster and encourage a theological taste, supported as it was no doubt by his own known proficiency in the Hebrew language, and his lifelong intimacy with some of the most eminent ecclesiastics of his own time. He was an "admirable Crichton" in his way, and it may be said of him in well-worn phrase—he touched nothing that he did not adorn. He excelled as a philosopher and physician, and equally so as a theologian, in an intensely theological age.[a] Presuming his epitaph to have been written by Henry Dodwell, who knew him long and intimately, it may be maintained that with truth the pupil styled the master

"Philosophus Medicus Summusque Theologus Idem."

[In Cap. XVII. of Bedell's Statutes (quoted by Dr. Barrett) I find the following respecting the theological position of the Medical Fellow :—" Quod vero ad exercitia attinet requisitæ a Theologis durante quovis termino, nolumus ea *Professori Juris prudentiæ aut Medicinæ remitti:* sed ab utroque præstari, *Sive communes loci fuerint seu* Theologicæ Disputationes." In Cap. XVIII. of the Caroline Statutes (1637) the "Jurista" and "Medicus" were exempted from the performance of common-places, while they were bound to lecture in their respective faculties ; but they were expressly bound to perform "disputationes et exercitia requisita a Theologis."—See MacDonnell's edition of Statutes of T.C.D., 1848.]

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.[b]

Dr. Churchill, President.

Hypertrophy of the Cervix Uteri.—Dr. Beatty exhibited a specimen of hypertrophy of the cervix uteri, causing elongation of that portion of the organ. The subject of the present case, a girl, aged nineteen, and not married, applied to him for relief, complaining of "something"

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[a] "Theology being the favourite study of these times, we shall not be surprised to find the following entry in the registry :—

July 23, 1617.—The Lord Deputy, the Lord Chancellor, and the Earl of Arundell were entertained at the College with a theological lecture and disputation. The performance of the former was by Dr. Ussher : of the latter by Mr. Martin, Respondent ; Mr. Egerton, and Mr. Donellan, Opponents. The questions were these :—1. Spiritus Sanctus in Scripturâ loquens est solus infallibilis Judex controversiarum.

2. Jejunium Pontificium neque Scripturæ neque rationi est consentaneum."—Barrett's MSS., p. 151.

[b] These reports are furnished by Dr. R. W. Smith, Secretary to the Society.

coming down from her, and hurting her very much when she attempted to sit. It did not inconvenience her much in walking. On examining her he found the cause of her annoyance was an elongated cervix uteri, which projected outside the vulva, accompanied with an extremely short vagina, a condition of parts which rendered it extremely unlikely that any permanent relief could be afforded to her without some operative proceeding. He accordingly determined upon its removal, and adopted the mode by the écraseur. The patient was placed in the position usual in cases of lithotomy, and chloroform having been given, the elongated cervix was drawn down by a vulsellum, enclosed in the noose of the écraseur, and within a very short time completely divided. At the commencement of the operation he used the wire écraseur of Dr. Hicks—the rope consisting of eight threads of wire—but from some imperfection in the instrument, the attempt ended in the rope breaking, and he had to finish the operation with the ordinary chain écraseur.—*December* 10, 1864.

Cancer of the Gall-Bladder.—DR. ARTHUR FOOT brought before the society, by request of Dr. Stokes, this specimen, which had been referred to him on the previous Saturday for examination. The weight of the liver and gall-bladder (making a deduction for the adherent parts) was 3 lbs. 11 oz. The measurements of the right lobe were, in the vertical direction, $8\frac{1}{2}$ inches, transversely, $4\frac{3}{4}$; of the left, vertically, 6 inches; from side to side, 3 inches. This disproportion was the cause of the remarkably elongated form of the right side of the liver, and was due to the traction of the enlarged cancerous gall-bladder, which, adherent to the lower edge of the right lobe, pulled it very much downwards. There existed a very well marked transverse sulcus between the upper half of the liver and its free edge, from the protrusion forwards of the lower half of the gland, by the diseased mass occupying the vesical and portal fissures. The gall-bladder contained 99 small irregular-shaped coal-black calculi, homogeneous in composition, soft, and, when dry, friable. All sank in water. Between and around them in the bladder was a quantity of creamy yellow fluid, with thicker flakes of yellowish lymph. The interior of the bladder was much contracted, nodulated, and of a pale cream colour. The efferent duct was quite obliterated. The anterior wall measured two lines in thickness; the lateral walls became thicker towards the posterior part, where the parietes were $1\frac{1}{2}$ inches thick; on section, of a light yellow colour, firm but not hard, of the consistence of a healthy brain; the juice from the divided wall showed, under the microscope, abundance of the cells typical of acute cancer; the cells and nuclei large and oval; many of them were undergoing the process of oily degeneration; the peritoneal coat of the bladder was thickened, and the subserous areolar tissue was œdematous; from the vesical fossa a thick

nodulated mass of white cancerous formation passed up to the portal fissure, with enlarged glands on either side; and these branched right and left. The diseased mass in the portal fissure was connected with the curve of the duodenum and the head of the pancreas—the lobules of which gland were enlarged, firm, and of a pale, greyish, white colour; the submucous tissue of the duodenum, where the bowel adhered to the liver, was studded with nodules of the size of beans; and the same appearance was presented by the corresponding tissue in the transverse colon, where it was fixed to the under surface of the gall-bladder; there was no trace of the pancreatic duct or of its duodenal orifice. Except in the portion of the lower edge of the right lobe adjacent to the diseased gall-bladder, there was no cancerous infiltration of the hepatic structure. Distilled water having been added to the creamy, clotted fluid in which the calculi rested, and the albumen coagulated by heat and separated, Pettenkofer's test for bile was carefully applied to the clear liquid, but failed to give the least indication of its presence, as also did the test by nitric acid.

According to Rokitanski, carcinoma of the biliary passages is chiefly met with as a complication of cancer of the liver. It occurs either as an idiopathic, nodulated deposit in the submucous tissue, in rare cases giving rise to annular stricture and degeneration of the entire bladder into a cancerous capsule, or as cancerous infiltration of the mucous membrane; or, as is more commonly the case, the biliary passages are attacked from without, cancerous growths in the vicinity perforate the parietes, and push their way into the cavity. From the great local violence of the disease in this case, from its having, as it were, accumulated itself in the posterior wall of the gall bladder, and in the cystic duct, and from the comparatively slight amount of disease in the liver, and that only in the contiguous part, I think that we have grounds to believe that the disease originated in the gall bladder, and the adjacent structures became affected from contact rather than from lymphatic infection; otherwise there would most probably have been more diffusion of the disease. There are many proofs, especially in cancer of the abdominal viscera, that mere juxtaposition will ensure the infection of one organ from another.—*December* 10, 1864.

Tumour of the Male Breast.—DR. M'CLINTOCK exhibited a specimen of mammary tumour which had been sent to him from Dundalk, by Dr. Brunker. It had occupied the centre of the left mammary gland, immediately beneath the nipple. Before its removal from the body it presented the characters usually belonging to scirrhus; it was extremely hard, was firmly attached to the integument, and movable in a very slight degree; there were two enlarged glands in the axilla. When the specimen came into his (Dr. M'C.'s) possession it had been immersed in

spirits of wine for some time, so that they could not detect some of the characters that would have enabled them to pronounce positively as to its pathological nature. It was very firm, very hard in its texture, very dense, and presented to the feel and to the naked eye the characters ordinarily attributed to scirrhus. However, it might be one of those forms of tumours that are nearly allied to scirrhus—some variety of fibro-plastic growth; so that we could not say with certainty that it was a scirrhous tumour. Anxious to know if a microscopical examination would throw light on the subject, he asked Dr. John Barker to examine it, and that gentleman reported it to " possess a considerable quantity of active germinal matter, and bands of a highly refracting character, such as we find in scirrhus." So far the specimen presented no striking or remarkable feature. The only circumstance connected with the case that invested it with interest was that the subject of this disease belonged to the male sex. He was a stout, healthy countryman, aged about thirty-five years. He first noticed an enlargement in the mamma about two years previously, but for some months past he experienced considerable annoyance from the tumour. Dr. Brunker hesitated to recommend excision on account of the enlarged glands in the axilla. However, the patient was bent on having it removed, as he was going to America, and Dr. Brunker yielded to his importunity and extirpated the tumour. The wound healed rapidly.—*December* 10, 1864.

Fatty Degeneration of the Heart, &c.—Dr. HAYDEN said the morbid specimens which he exhibited were taken from the body of a man fifty years of age, a blacksmith by trade. This man had been admitted under his care into the Mater Misericordiæ Hospital, on the 10th of March. He was then suffering from general anasarca. The urine contained albumen in considerable quantity. It was, however, of high specific gravity. He treated the man for albuminuria simply, and in the course of a month his condition was so much improved that he was able to resume his trade. The dropsical effusion had been entirely dispersed, and the man was in a generally satisfactory state.

He lost sight of him until the 14th of last November, when he was again received into the hospital. He had then œdema of the face and extremities, likewise lividity. He suffered from extreme dyspnea. His pulse was quick, small, weak, irregular and failing. The urine contained on this occasion only a trace of albumen. It was passed in some quantity, and loaded with lithates. The action of the heart was laboured, but the sounds were distinctly audible and unattended with murmur of any kind. The man, when he lay down at night, became delirious, manifestly because of the circulation of unoxidised blood in the brain. The chest was universally resonant, and offered decided evidence of emphysema; there were, moreover, loud bronchitic râles on both sides. It was

unnecessary to follow the case in its daily progress. Suffice it to say that with occasional, but temporary, improvements, the man's condition became worse from week to week, and on the 15th of December he died.

Although his pulse had been irregular previously, on the day before his death it became quite regular, although feeble to a degree.

On making a *post mortem* examination he found the lungs, as had been previously determined, generally emphysematous. The pericardium and each pleural cavity contained a large quantity of serum. The heart was covered with a deposit of fat, and on the anterior surface of the right ventricle a " white spot," of unusual magnitude, was seen ; another of a similar kind, but much smaller, was found on its inferior surface ; and a third near the right auricular appendix. These spots were due to a deposit of lymph beneath the serous investment of the heart. The right ventricle contained a small quantity of coagulated fibrin, which extended into the right auricle. The walls of the right ventricle were slightly thickened, and the cavity considerably enlarged. The walls of the left ventricle were likewise thickened slightly ; the valves on both sides were perfectly sound, with this exception, that at the attached portion of the mitral valve were found two or three spots of incipient atheroma. The muscular structure of the heart was lacerable by the slightest force. On examining the tissue under the microscope he found, in place of the muscular tissue proper, which had disappeared, that a quantity of fat in the form of molecules, was deposited within the sarcolemma of the fibres. The kidneys were not enlarged, but their surface was lobulated. On making a section he found the cortical structure in an early stage of fatty degeneration, and on examining it under the microscope he found its condition very similar to that observed in the muscular structure of the heart. On examining the urine pressed out of the papillæ, he ascertained that it contained a small quantity of fatty particles, although such was not contained in any of the urine which he had passed before his death.

The points of interest in the case were, firstly, that nine months ago, when the man was under treatment, there was no evidence of disease of the heart or lungs ; secondly, that on his re-admission the renal symptoms were masked by the pulmonary and cardiac symptoms ; and thirdly, the fact that although his pulse had been irregular for some time previously, it became quite regular immediately before his death, while at the same time it was so weak as to be barely perceptible.—*December* 17, 1864.

Encephaloid Disease of the Bladder.—Mr. TUFNELL exhibited a specimen of encephaloid disease of the bladder, taken from the body of a gentleman aged fifty-four. In October, 1862, he was on board ship in a gale of wind, when, being jerked off a ladder, he was strained considerably in the right groin. No hernia followed. He felt much uneasiness in the groin at the time, but had no serious symptom until April, 1863—a

period of six months—when, after being on horseback for some hours, he felt himself unable to make water on attempting to do so. This retention was followed by hematuria, which returned at intervals, but accompanied by very little pain, until the month of October, 1863. He sometimes passed pure blood, and at others perfectly clear and healthy urine. In October, 1863, severe pain, referred to the right side of the bladder, first began to be experienced after micturition. The disposition to make water became more frequent, and some of the other symptoms of calculus began to show themselves. The bladder was accordingly explored by a sound; and the result of this examination, coupled with the fact that he experienced no increase of pain whatsoever when he jumped from off a chair on to the ground upon his heels, led to the conclusion that there was no stone in the bladder. The introduction of an instrument into the bladder was always followed by an increase of the hematuria, and this circumstance led to the suspicion that malignant disease of the bladder existed.

From October, 1863, to June, 1864, there was a steady increase of the symptoms; a constant passing of blood, more frequent micturition; and on the introduction of any instrument into the bladder the agony became so intense that no attempt to explore it could be now made without placing the patient under the influence of chloroform. During the whole of this time his general health was very good; appetite was not impaired; he did not lose flesh; and it was only in July, 1864, that his health began to give way. On the 13th of July, 1864, the urine was examined under the microscope by Dr. Barker and Dr. Carte, and the following is the report :—That there were some cells having a very malignant aspect, being crowded with nuclei. There was also much inflammatory matter, and coats of the urinary tubes. They were of opinion that if the case was one of cancer it was the medullary form of the disease. From that time the symptoms increased, and cancerous cachexia set in. The urethra became blocked up with fibrinous lumps and leech-like clots of blood, causing intense distress. The bladder became gradually filled up with the cancerous mass; the pain was excruciating; and the discharge from the bladder consisted almost entirely of cancerous *debris*, with grumous blood. In October a tumour in the bladder could be felt above the pubis, and by the finger introduced into the rectum. He now went to London, and died on the 25th November. Three weeks before death he fell into a comatose state, in consequence of suppression of urine, and for several hours was supposed to be dead. He rallied, however, and lived for three weeks afterwards, but with a total loss of memory from the time of the attack.

Upon examination, *post mortem*, the bladder was found entirely occupied by a soft medullary growth, but in no other organ of the body was there any trace of malignant disease.—*December* 17, 1864.

Congenital Luxation of the Patella.—Mr. WILLIAM STOKES brought under the notice of the society a case of congenital luxation of the right patella. This deformity occurred in a boy aged nineteen years, who on the 15th of last October applied at the dispensary of the Meath Hospital to obtain relief from a severe pain in the left knee-joint. Upon examining the part, however, Mr. Stokes could not find that there was indication of any local inflammation, or of any other cause for the pain. Wishing to compare the two limbs, he requested the patient to expose the right knee-joint; and on this being done he was struck with the remarkable deformity which it presented, the patella being completely luxated outwards. The patient could give no information as to the cause of this deformity. He stated that he had had it as long as he could remember anything, and that he had never consulted any physician or surgeon with regard to it, as the malformation had never given him any uneasiness, and interfered but little with his progression. From this account Mr. Stokes suspected that the case was one of congenital malformation; and this view was strengthened on carefully examining the joint, for on doing so he found the external condyle of the femur was altogether deficient. This deficiency then, and the natural anatomical causes for luxation of the patella outwards, appeared to be the two etiological conditions which produced the malformation. The mother of the patient also stated that her son had this condition of the knee from the time of his birth.

Cases of congenital luxation of the patella are of extreme interest in consequence of their great rarity. Since the formation of the Pathological Society of Dublin only two examples of it had been exhibited, both of them by the distinguished Secretary, Professor Smith. In one of them there was, as in the present case, a complete failure of the external condyle of the femur. There was also a congenital luxation of the radius on one side. In Mr. Stokes' case there was no luxation in either of the upper extremities, the congenital malformation being confined to the right knee-joint. Professor Smith had mentioned to him that he had seen, a few years ago, in St. Bartholomew's Hospital, a young lad on whom there existed a congenital luxation of the patella outwards upon each side; but there was, in this instance, no malformation of any of the bones composing either of the articulations.

It was remarkable, when we looked into the literature of the subject, how few instances were recorded of this peculiar deformity. M. Malgaigne, although he mentions the existence of these luxations, does not mention a single case that ever fell under his own observation. He refers to those recorded by Periot, Bernard, and Paletta; but as to these being true congenital luxations he entertains considerable doubts, thinking it more probable that the so-called congenital luxations owe their origin to some pathological condition. There can, however, be little doubt that M. Malgaigne is in error in taking this view with regard

to these luxations—an error probably arising from his not having had an opportunity of observing an example of the malformation. The evidence afforded by the present case clearly shows that such congenital luxations do exist, and Professor Smith states that in his cases there was unquestionable evidence that the deformities were truly congenital.

Mr. Stokes remarked that with regard to the interesting question as to the etiology of these congenital luxations, three theories had been advanced by the different surgical authors who have investigated this subject. Some writers, among whom M. Malgaigne stands foremost, attribute these malformations to some pathological conditions of the part, paralysis of adjacent muscles, ligamentous relaxation, &c., &c. Others hold that they result from some mechanical cause operating in intra-uterine life; and lastly there is the physiological theory, that held formerly by Dupuytren, and now by Professor Smith, and which attributes these congenital luxations not to any pathological or mechanical cause, but to an arrest of development, an original defect in the germ, and one which occurs during the very earliest period of organization in the part.—*December* 17, 1864.

Caries of the Elbow-Joint.—Mr. Collis exhibited to the society the lower end of the humerus which he had, a few days previously, removed from a man who had been long suffering from disease of the elbow-joint. The points of interest in the case were these :—A considerable portion of the circumference of the bone was affected by softening, the ordinary result of inflammatory action, but beyond the softened portion the osseous tissue had become condensed and hardened; it was extremely difficult to saw through it, and the section presented a smooth surface and white colour. Another point of interest was, that while the front of the articular surface of the humerus was carious the inferior surface was healthy, a barrier of lymph separating the two portions. The radius and ulna were healthy. Extension could be performed, but the range of flexion was limited. He hoped at first that it would be possible to get away the softened parts of the bone by gouging; he found, however, that the caries had extended far up the humerus, and to a great extent round the bone, especially towards its outer surface; as much of this as possible was removed by the gouge subsequently to the section of the bone.— *December* 17, 1864.

Endocarditis.—Dr. Corrigan exhibited a specimen of endocarditis, complicated with ascites, which occurred in a girl, aged nineteen, who had been under treatment in Whitworth Hospital. The first point of interest in the case was, that the two diseases—ascites and endocarditis— did not, except in a very trifling degree, stand to each other in the relation of cause and effect; for, though there was a great amount of

ascites, there was no turgescence either of the face or of the large veins of the surface, nor was there any evidence of mechanical obstruction; so that they were obliged to look at the ascites, although no doubt to a certain extent connected with the endocarditis, still as a distinct disease. With respect to the endocarditis there were some points of interest. When the girl was admitted her symptoms were the following:—Intense orthopnea; blue lips; no turgescence of face, but excessive weakness of the circulation.

Endocarditis is a disease which the physician is obliged to diagnose as much by negative as by positive signs. Thus in the present case the first symptom was orthopnea, indicative of disease in either the respiratory or circulating organs. The next symptom was the weakened action of the heart; this is dependent on the same law which prevents the intercostal muscles from acting in pleuritis, viz., the instinctive refusal of the muscles to act over an inflamed surface. In the same way the muscles of the heart will not act where there is inflammation of the pericardium. From the operation of this law, when endocarditis comes on suddenly the patient sometimes dies as suddenly, from the refusal of the heart to act over the inflamed membrane. The two symptoms which he had mentioned—orthopnea and the weakened action of the heart—indicated that the disease was either pericarditis or endocarditis. The first hypothesis as to effusion of lymph was, however, negatived by the fact that there was no friction sound at any time; and when there is effusion distending the pericardium, the fluid always extends upwards as its principal direction, and we have dulness as high as the first or second rib. In the present case that sign was wanting; so that they had thus arrived by negative signs at the determination of the disease as endocarditis. The positive signs were, weakness of the heart's action and the bruit accompanying the action of the heart. The girl was relieved from the ascites by tapping; and her condition was so far improved that she left the hospital in a few weeks; but being unfortunately in poor circumstances, and unable to command the comforts necessary for one in her condition, she returned again and again with relapses, and finally came into the hospital, about six weeks or two months ago, sank gradually, and died a few days ago. The *post mortem* examination was, in a pathological point of view, very interesting, as regards the endocarditis, supporting the view which he (Dr. Corrigan) had put forward on former occasions, viz., that in cases of valvular disease the origin of the malady is the deposition of lymph, the result of inflammation. First there is a deposit of lymph; this continues until cirrhosis is set up, and goes on daily, till at length the valves are contracted and incapable of performing their functions. In the present case the progress of the disease could be traced from the *post mortem* appearances, the valves of the pulmonary artery being healthy, transparent, and thin; but of the aortic valves one

was an eighth of an inch thick, and there was a deposit between the membranes, which appeared to be lymph. This was a distinct proof that the commencement of the disease in this girl was the deposition of lymph between the folds of the valves; it was not absorbed, and it then took on the action of cirrhosis, which contracted the valve along its base, dragging down its upper or floating margin; and eventually there would have been great permanent patency of the aorta. With regard to the treatment of such cases, the principal points deducible from the views he had taken, if correct, was, that for a very long time the disease must be treated just as a case of deposition of lymph elsewhere would be treated—by antiphlogistic remedies, counter irritants, and remedies of that kind which prevent the effusion and promote the absorption of lymph.—*December* 17, 1864.

Cirrhosis of the Liver.—DR. MacSWINEY brought under the notice of the society a case of cirrhosis of the liver. He said that the subject from whom the pathological specimens had been taken was a man, aged about forty-five years, who died, under his care, in Jervis-street Hospital, ten days previously. He first entered the hospital in the month of October last, suffering from ascites and anasarca. He was weak, and very emaciated; he had a dull, sallow, but not jaundiced, complexion, and complained of much inconvenience and suffering from the accumulation of fluid in the peritoneal cavity. He was received into hospital with a view to relieve the symptoms he laboured under, and, if possible, to cause the absorption, by therapeutic means, of the effused fluid; but, after some ineffectual efforts, by the administration of medicines, to accomplish this object, his distress of breathing having become almost extreme, Dr. MacSwiney requested his colleague, Mr. M'Donnell, surgeon to the hospital, to remove, by tapping, the accumulated fluid in the peritoneal cavity. This was done, and was followed by great and immediate relief to the symptoms; the distress of breathing and general feeling of uneasiness experienced by the patient were for the time removed. So very considerable, indeed, was the relief obtained that, in the course of a week afterwards, the man left the hospital, and returned to his ordinary occupation as a labourer. He worked for about a fortnight or three weeks; but at the end of that time was suddenly attacked with vomiting and purging, the vomited matter and that discharged from the bowels being a tar-like fluid, both in colour and consistence—being, in fact, blood altered by the action of the gastric and intestinal secretions. This speedily reduced him to a condition of great exhaustion, and in this state he was again received into hospital, three weeks after his discharge from it. In a few days after his readmission the fluid in the peritoneal cavity was found to have again accumulated rapidly, and in very considerable quantity, and all the symptoms of deranged bowels, debility,

distress of breathing, and loss of appetite returned with increased severity. The patient now requested most earnestly that the operation of paracentesis should be again performed, having derived so much benefit from it before; and Dr. MacSwiney accordingly once more submitted him, for an opinion on this point, to Mr. M'Donnell, who again performed the operation of tapping for him, but not with the same beneficial results that had followed its first performance.

Two days after this second operation the patient complained very much of abdominal distress, and an aching pain, with a feeling of sickness, referred to the stomach and abdomen. His countenance became extremely anxious and haggard; he had a small quick pulse; a dry tongue; thirst, sleeplessness, and loss of appetite. His death took place shortly afterwards.

Dr. MacSwiney had been induced, at the outset, to declare this to be, from the symptoms present, a case of cirrhosis of the liver. A *post mortem* examination had demonstrated the correctness of this opinion. The liver was found to be the subject of chronic disease of its connective areolar tissue—of, in fact, that disease which Frerichs has called " chronic interstitial hepatitis." The disease was exceedingly well represented in the present specimen; the liver was considerably diminished in size, though by no means so much so as in instances which had been previously brought before the society; and the spleen, which plainly appears to play such an important part in relieving the obstructed hepatic circulation, was considerably enlarged. The members of the Dublin Pathological Society were all now so familiar with the morbid conditions of the liver and spleen—diminution in size of the former, compensatory enlargement of the latter—which were usually found present in cases of this disease, that he would hardly have brought forward this instance at all were it not for the result which followed the second operation. It was rendered evident by the autopsy that the man had died, immediately, of peritoneal inflammation. A great quantity of recent lymph was poured out over the various organs in the abdomen, several of which were glued together by adhesions which were easily broken up. It might, perhaps (Dr. MacS. remarked), be considered by some that, in consequence of this result taking place, the operation of tapping was one which was not justifiable, and should not be performed in these cases. But this, certainly, would be a great error; for it must be admitted that a period often comes when it is justifiable to operate for the sole purpose of relieving distressing symptoms. In fact no one ever had recourse to the operation with the hope of procuring a total removal of the disease, but only to relieve urgent symptoms. He would say, then, that although in this case the operation was followed by a fatal peritonitis, that is no reason why, in a similar case, and under similar circumstances, the surgeon may not resort to tapping in order to relieve the patient of the accumulated fluid. On the

surface of the organ, near the upper margin of the greater lobe, there was a softened circular enlargement, which he had not as yet opened, but would do so now in the presence of the society.

[Upon being incised freely this swelling was found to contain a quantity of softened, broken-up, hepatic structure, mixed with blood. It was regarded as an instance of hepatic apoplexy, one of the results of the obstructed portal circulation.]

The patient in this case was a man of most intemperate habits.—*January* 7, 1865.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.[a]

TWENTY-SEVENTH ANNUAL SESSION.

Dr. Denham, President.

Dr. Cronyn exhibited a fetus with complete hernia of the brain, and other deformities. Dr. Foote was appointed to report on the anatomical structure of the specimen.—14*th January*, 1865.

Report of Two Cases of Protracted Labour, in which Delivery was Necessarily Effected by Craniotomy. By J. Cronyn, L.R.C.S.I., L.K.Q.C.P., Assist. Phys. to Dublin Lying-in Hospital.

I have selected the two following cases, which occurred in the Lying-in Hospital within the same week; and as the treatment pursued seemed totally ineffectual, at least in one of them, I trust the society will consider a brief description of some practical interest :—

No. 1.—A. D., aged thirty-five, first pregnancy, admitted to hospital December 25, 1863, at 7, p.m. She stated her labour commenced at 10, p.m., on the 21st, when the waters came away. On examination, the os was found to be the size of a half-crown, membranes ruptured, the head pressing firmly on the os, which was thick and rigid, the vagina was also very hot and dry; fetal heart audible in left inguinal region. She was ordered warm bath and aperient medicine; after the action of which she was treated by tartar emetic in nauseating doses, in combination with opium; repetition of warm baths and anodyne enemata were exhibited, the patient suffering much from want of sleep. This treatment apparently produced no effect until the evening of the 27th, when the os began to yield. At 11, p.m., being dilated to about two-thirds of its

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[a] These Reports are supplied by Dr. Geo. H. Kidd, Secretary to the Society.

diameter, on consultation with Dr. Denham, it was decided to try craniotomy, as the fetal heart was inaudible for several hours, and the patient beginning to show the usual symtoms of exhaustion, being at that time 144 hours in labour. The operation was performed, and the child, a large male, was with much difficulty extracted, the head being firmly ossified. Stimulants were freely given, and the patient for some time went on favourably; she suffered from retention of urine. On the third day she was attacked with symptoms of metro-peritoneal inflammation, which ended fatally on seventh day.

No. 2.—E. T., aged nineteen, admitted to hospital December 25, had been in labour from the preceding day. On examination, the os was found to be the size of a shilling, thick, dry, and rigid, the head present-ing, and membranes ruptured. Similar treatment was adopted, and about forty hours after admission, she being then fifty-four hours in labour, the os dilated fully. The patient remained six hours in the second stage, the pains being weak and at long intervals; the fetal heart being faintly audible, delivery by the forceps was determined on. There was great difficulty in passing a catheter; the forceps were applied without effect, and craniotomy was resorted to. This patient went on well, and was discharged the ninth day.

Having related the particulars of those two cases, and their results—the first being fatal to both mother and child, the second ending in the death of the child—I am induced to hope that the members of the society, who have had experience of those very severe instances of protracted labour, may suggest any plan of treatment that has proved successful in their hands. Various methods of treatment, such as the application of leeches and incisions through the rigid os, have been recommended, but I am not aware that they have found favour in this city. I think it right to add that bleeding from the arm was not tried in either case, as the patients were too long in labour before admission to hospital.—*14th Jan.*, 1865.

Dr. De Ricci read the following report on a work, *On the Uses of Opium in Obstetric Practice*, presented to the society by the author, Dr. Bribosia.

This memoir *On the Uses of Opium in Obstetric Practice*, including its employment in pregnancy, abortion, and delivery, forms the substance of the successful essay to which the prize of 600 francs was awarded by the Royal Academy of Medicine of Brussels, in 1863. It is divided into four parts, each again being sub-divided into chapters and paragraphs, and followed by an appendix and notes. It commences with a short notice of opium and its chemical constituents, and the different varieties of it which are generally met in the market; and the author here lays special stress on the fact that different samples of the same drug may

contain very different quantities of morphia, varying from nine per cent., in Smyrna opium, to as little as two or three per cent. in Alexandrian opium, and on the consequent uncertainty in estimating the real narcotic value of any opiate preparation, in the absence of any knowledge of the variety of the drug employed. Dr. Bribosia proposes that no opium should be employed by apothecaries except such as should bear the Government stamp, representing a certain standard per centage of morphia. It then passes to the consideration of the physiological properties of opium, and starts with the assertion that "opium exerts a special action on the nervous system, which it tends to annihilate, not chemically, but vitally;" that "opium alters the material composition of nervous tissue, and in large doses it alters it so far that it annihilates its functions altogether;" also that it exerts a special power over the genital function, increasing the menstrual discharge in women, and also producing a sedative action on the gravid uterus. The author devotes several pages to the consideration of the physiological effects of opium both on the cerebro-spinal and on the sympathetic system, quoting largely from Müller, Cl. Bernard, B.-Séquard, Waller, and Budge; and at page 27 he enters on the more practical portion of his memoir, commencing with "The Uses of Opium during Pregnancy." Dr. Bribosia is of opinion that opium is so modified in its action by the existence of pregnancy, and that the toleration of it is so great in that condition, that he actually proposes its administration in obscure and doubtful cases of pregnancy as an additional means of diagnosis, in which opinion he is followed by Van Huevel and Hyernaux of Brussells. He then passes to consider the different ailments to which pregnant women are liable, and which can be alleviated or cured by opium. And here he quotes largely from British medical literature, frequently mentioning the name of our distinguished President, together with those of Graves, Collins, Burns, Denman, Gooch, &c. Having considered the treatment of gastric derangements, in which he recommends opium in combination with alkalies, he passes on to spasm of the stomach and duodenum, and quoting from Burns, recommends laudanum and ether per orem, together with saline injections per anum. He then alludes to the value of opium in constipation, and in the vomiting of pregnancy, applying it endermically in the latter case by sprinkling with morphia a spot over the pit of the stomach previously denuded of cuticle. Having reviewed the several gastric derangements in which opium can be made available, he enters on the consideration of the effects of opium on the circulatory system, commencing with uterine congestion. Having, at page 35, described its symptoms, he says:—"After a general bleeding, opium is the most valuable remedy we possess. True, that the plethoric condition is a counter-indication to the use of this narcotic by itself; still, when once the tumultuous circulation will have been subdued by a bleeding, then

the opium will prove of the greatest value. . . . The dose must be large in order to produce immediate narcotic effects on the uterus, and thus render insensible the threatened organ; the intestines must first be emptied by a copious injection, followed immediately by a small one, containing twenty drops of laudanum Sydenhami, to be repeated every half hour if necessary, four or five times in succession." Having exhausted this subject, he passes to the consideration of hemoptysis, hematemesis, hemorrhoids, &c., till, at page 40, we come to Chapter III., which commences with the uses of opium in the treatment of hydrorhea, and in the ptyalism of pregnancy, where he specially makes honourable mention of our great Irish physician, Robert Graves—one to whom a statue should long ago have been erected in this city, if ever genius and knowledge deserved one. Passing Chapter IV., which is devoted to the consideration of opium in the treatment of affections of the respiratory organs, we come to the treatment of puerperal mania, where we find our author again quoting Graves and our distinguished President. We then find him quoting Corrigan and Donovan as having recommended opium in large quantities in rheumatism; and as this is so often, though so mysteriously connected with chorea, Dr. Bribosia advises its employment freely in the last mentioned disease. Passing then to eclampsia, sometimes called the epilepsy of pregnant women, he says that opinions are divided as to the advantages of opium in the treatment of this disease. In England, Burns is of opinion that it should be tried if the convulsions do not yield after bleeding; while in Germany, Scanzoni, of Wurzburgh, looks on it as a sheet anchor in this affection. His own opinion is that its administration must be greatly influenced by the condition of the patient: if you have to deal with a strong plethoric woman, bleed largely; if, on the contrary, with a feeble, nervous, anemic creature, then give opium; in a medium case use both bleeding and opium. Dr. Bribosia believes that eclampsia often arises from albuminuria, and consequent uremic poisoning. He recommends extremely large doses of opium in the treatment of it—as much as one grain of solid opium every ten minutes, till as much as ten and even twenty grains of opium shall have been administered (see p. 61); and he asserts that although it will calm the spasmodic action of the uterus, it will not much retard the progress of the labour. Our author strongly recommends the use of opium in spasms of the uterus, as well as in rigidity of the neck and os; and for the treatment of pruritus vulvæ—always a troublesome affection, and when very severe becoming a serious complication, leading even to abortion—he records an instance in which a woman miscarried eight successive times in consequence of pruritus. Passing to the subject of miscarriage, he says:—" If there be one remedy, the effect of which is truly efficacious—nay, wonderful, in the treatment of this misadventure, it is decidedly opium. Opium, together with bleeding, are the most

powerful means we possess in the treatment of miscarriage." He recommends opium, not only to arrest threatened miscarriage and premature labour, but he advises it to be employed even as a prophylactic in all cases of pregnancy which have been preceded by miscarriage. In the uterine hemorrhage of pregnancy he recommends opium in large doses (see p. 89), and in the management of threatened abortion he considers opium the most valuable remedy we possess; but he cautions the practitioner to make sure that the fetus is alive, because if dead no means should be adopted to retard delivery. He prefers to administer it per anum, in small enemata, containing half drachm doses of laudanum, repeated every hour, until the uterus shall have ceased to contract; it will be necessary, however, to watch the patient carefully, and if the pains should be very severe, and if there should be great rigidity of the os, he advises bleeding from the arm, and the administration of opium per orem. Coming now to the consideration of labour at full time, he says:— "After parturition, if there should be any difficulty in removing the placenta, owing to spasmodic contraction of the uterus, opium will again be found of the greatest value." Dr. Bribosia, however, differs from Burns (whom he loves to quote) on the subject of the value of opium as a local stimulant to the uterus in cases of weak labour; he says that it is a mistake to look upon it as a stimulant—that it is, on the contrary, a perfect calmative, and that when its administration tends to help weak and tedious labour, it does so by suspending uterine action for a time, and thus allowing the woman to recruit her strength by rest and sleep. Then comes the consideration of all the various conditions of the womb in which opium will be found of use—"rigidity of the neck and the os," anomalous contractions, clonic and tonic spasms, or uterine tetanus, as he calls it, false pains, lumbar pains, &c., followed by the details of many cases, in all of which opium was administered with advantage—till we arrive at Part IV., which treats "Of the Uses of Opium During and After Delivery." He commences now with hemorrhage, which he divides into primary and secondary, according as it arises during the *first hour* after delivery, or later; having enumerated the several causes of it, he begins by considering the treatment of hemorrhage caused by inertia of the uterus, and asks the question—"Is opium advisable in this form of hemorrhage? Almost all the French obstetricians recommend it, while in England its value is commended beyond measure;" but, notwithstanding this general recognition of its value, Dr. Bribosia is decidedly of opinion that opium is not the remedy that ought to be administered in uterine hemorrhage from real inertia, except in such exceptional cases as might present inertia of one portion of the womb associated with spasmodic contraction of some other portion of it; but in simple uncomplicated inertia of the uterus our aim should be (he says) to encourage that organ to contract as speedily as possible—and as opium, according to his views.

possess quite the contrary power, it should never be prescribed. Still, opium is greatly used in England; and Burns, who is so great an authority in all obstetric matters (I quote the words of Dr. Bribosia), looks upon it as the most powerful agent we possess for the treatment of these cases. Feeling himself so diametrically opposed, not only to Burns, but also to his countrymen, he endeavours to seek out and determine the reasons which have decided Burns to place so great a faith in the administration of opium in such cases, and after quoting from him a couple of pages, at length he concludes that it is evident that the British obstetrician recognises two causes in this form of *post partum* hemorrhage—"the relaxation of the uterine fibres," and also "a certain spasmodic condition of the blood vessels," both which causes tend to the production of congestion of the uterus, and he therefore places reliance on opium in such cases, because he recognizes the value of that drug in subduing spasm. Dr. Bribosia, however, does not believe in this spasm at all; and being convinced that the hemorrhage is entirely due to relaxation of the uterine muscular fibre, condemns the use of opium, and relies entirely on ergot. In those opinions the author considers that he is backed up by the writings of our late respected President, Dr. Beatty, from which he quotes at length. Dr. Bribosia is not, however, so averse to the use of opium in the later stages of *post partum* hemorrhage, when it may be necessary to allay nervous excitement and procure sleep, and he illustrates it by numerous well-detailed cases. We now come to secondary hemorrhage, the definition of which he adopts from Dr. M'Clintock; and, having disposed of it, he enters on the consideration of puerperal mania coming on *some time after delivery*. In this form of puerperal mania he is of opinion that our principal reliance should be placed in opium, and he quotes, in support of it, from the writings of our friend, Dr. Athill. From this he passes to review the uses of opium in complicated labour; and finally, at page 158, he enters the subject of rupture of the uterus, an accident of the gravest import, almost always fatal; and when not so, owing specially, if not always, to the free administration of opium in heroic doses. Speaking of the value of this drug in these cases, our author says :—" The success of this practice agrees completely with the treatment of perforation of the intestines by opium—a discovery due to Graves of Dublin, and the practice of which has been adopted in every country, and become now an established rule. We then find him extolling the uses of opium in manual and instrumental delivery, commencing with the Cesarian section *in capite*; and as the mortality in this operation of four out of five is due, according to Keyser, principally to traumatic peritonitis, and as opium has been proved of such signal value in perforation of the intestines, he concludes that it will be found of equal value in this operation. Phlegmasia dolens now forms the subject of the author's argument, and again we find him largely quoting from Graves, who

recommends full doses of opium in its treatment, and he ends by saying—
" the instructions which we have here received from the celebrated Irish
professor are of the greatest value. We believe that the rules which he
lays down, relative to the treatment of *post partum* accidents, will be the
means of directing our steps towards a happier and more successful
system of treatment. His directions to sustain the vital force by
analeptics, opium, and quinine, and not to abstract blood, except locally,
and even then with the greatest reserve, ought to be, according to him,
the basis of treatment, and we fully concur with him." At page 189 we
find him engaged with the subject of puerperal peritonitis, which he
recognises as one of the most fatal of diseases, and one which, notwith-
standing all that has been written about it, and all the dissertations and
long discussions held about it at the Academy of Medicine, still remains
surrounded by unexplained questions and difficulties. Then follow
several cases extracted principally from Dr. M'Clintock's writings, in
which the principal feature was the treatment by opium and wine ; and
again, on this occasion, Dr. Bribosia takes the opportunity of paying a
high compliment to the Dublin Obstetric School, as in the following
quotation :—" We owe very much to British obstetricians, from whose
theory and practice we have received many valuable suggestions ; and the
ideas of Murphy, Hardy, M'Clintock, Churchill, Montgomery, Beatty,
Denman, &c., are becoming every day more known and accepted, and
we have seen even Trousseau himself finally adopt them."

We have now concluded (says Dr. Bribosia) our studies on the value
of opium in obstetric practice, and when we look upon the wonderful
power of this drug, we cannot feel surprised that the ancients should
have regarded it as a " gift of the gods."—*14th January*, 1865.

Statistics of Lying-in Hospital of Moscow.—The REV. PROFESSOR
HAUGHTON communicated the following statistics, which he had obtained
from the MS. records of the Lying-in Hospital during a recent visit to
Moscow :—

From 1832 to 1860, inclusive :—Total deliveries, 45,162

Natural,	38,317
Irregular (hand),	1,329
Do. (instrumental),	739
Twins,	846
Trins,	11
Still-born,	3,450
	—— 45,088

Disposed of as follows :—

To Foundling Hospital (Boys),	21,944
Do. do. (Girls),	20,525
Taken home by mothers,	86
	—— 42,555

The mortality of the children in the Foundling Hospital, during the past three years, after birth, was 42 per cent. Of those that live, the males are trained up for the Russian army and the girls are instructed in various industrial occupations.—14*th January*, 1865.

Dr. H. Kennedy read a paper on *Hydrocephalus*, which will appear in the Journal for August.—11th *February*, 1865.

On the Action of Ergot of Rye upon the Fetus. By Dr. M'Clintock.

That the administration of ergot of rye, in the second stage of labour, is very apt to be followed by injurious or fatal consequences to the fetus, if its birth be delayed much beyond an hour and a half, is a proposition that will scarcely be called in question here; and I believe there is hardly any accoucheur of eminence or experience at the present day who is not of the same opinion with regard to this medicine. Indeed so notorious is this effect of ergot, when good, and given in full doses, that it has been proposed to call it the *pulvis ad mortem*, as a fitting substitute for its name of *pulvis ad partum.*[a]

Soon after the introduction of ergot into obstetric practice its *modus operandi* in thus affecting the child became a subject of close inquiry Its injurious action upon the fetus was manifestly a great bar to its.

[a] The evidence which might be accumulated on this point is overwhelming. On the other hand, Dr. Denham, in a paper published in a back number of this Journal, has expressed doubts as to the injurious effects of ergot on the fetus; but a rigid examination of the cases therein detailed will show that they are not directly at variance with the principles above laid down. In like manner a close analysis of the 173 cases reported by Dr. R. U. West to the London Obstetrical Society, clearly demonstrates that very few of them can be taken as data for deciding the particular question before us; whilst the number which can strictly be said to bear evidence on the opposite side is extremely small—not more than about 12 cases. For although there are 28 of his cases in which the interval between giving ergot and delivery was two hours or upwards, still in 16 of them either the ergot produced no marked increase of pains, or only one dose was administered, or the liquor amnii was not evacuated when it was given; and, under any of these circumstances, hurtful effects to the child are not to be expected. In 95 (more than the half) of his cases the child was born *within one hour* from the giving of ergot; in 44 instances it was born within thirty-six minutes. In the great majority of instances the os was not fully dilated at the time of exhibiting the ergot, and in 38 instances it was only the size of a shilling or half-a-crown; and in 17 cases the membranes were still entire when the ergot was administered. In none of the cases was the fetal heart examined. From this brief summary it will be apparent that in deciding the question—how far ergot can affect the fetus?—Dr. West's long list of cases, though valuable and interesting in many respects, carries very little weight. In one way they afford corroboration of the views expressed in my present communication, by showing that, where ergot is not given in a full dose, nor in the second stage of labour after the discharge of the waters, nor with the effect of exciting persistent uterine contraction—then, under any of these circumstances, there is little or no risk of injury to the child.

employment, a great check upon its usefulness, and hence accoucheurs were most desirous to discover how this baneful effect was brought about, in the hope of being able to obviate or correct it. Two opinions have been advanced to account for the destructive action of the medicine on the child. According to one of these the ergot acts in a physiological way, that is to say, it enters the circulation of the mother, and is conveyed, through the medium of the blood, to the fetus. Now this is one explanation; and amongst its supporters we find the names of two of the highest authorities on the subject of ergot of rye—viz., Dr. Beatty and Dr. Hardy; and it is not, I assure you, without considerable apprehension and reluctance that I would venture to dissent from any opinion of theirs upon an obstetric subject, much less upon one which they have so closely and so successfully investigated. But

<div style="text-align:center">Amicus Plato, amicus Socrates, magis amica veritas.</div>

On the supposition that the poisonous property resided in some particular element or component part of the ergot, various attempts have been made to isolate the different constituents of the medicine, with the hope of obtaining the true parturifacient principle distinct and separate from the poisonous one. But all such attempts have been unsuccessful, and for a very sufficient reason I think. Many years ago I assisted in making a series of experiments with different preparations of ergot, but the results did not at all answer our expectations.

The other opinion, as to the *modus operandi* of ergot upon the fetus, is to this effect—that the child is destroyed in consequence solely of the violent or continuous labour pains which the ergot excites.

Up to the present moment it is an unsettled question which of these two explanations is the correct one. Authors and practitioners are still divided upon it, though I am bound to say that the greater portion of the profession seem inclined to adopt the second theory as the correct one.

It is not my intention to weary you with any examination of the facts and arguments which have been brought forward in support of each of these theories by their respective advocates—I merely wish to lay before you, in a very general way, the results of my own experience and reflection on the point, and to state my reasons for believing that the second, or "mechanical theory," as it has been designated, embodies the true explanation of the mode by which ergot acts on the fetus. This is not by any means an unimportant or speculative inquiry; on the contrary, it is one of the deepest interest to the obstetrician, and, like all questions relating to the action of remedies, has an intimate bearing upon practice.

At the outset of my professional life I adopted the opinion that ergot exerts a direct and specific influence on the fetus. More enlarged observation led me to doubt, and subsequently to relinquish, this idea—as, throughout a pretty wide field of experience, I did not meet with any

evidence that could, in a direct, positive manner, lend it support. I have never met with a case where the child manifested, after its birth, symptoms of what might be called " ergotic poisoning ;" and the cases I have seen where depression of the heart, or even the death of the child took place after ergot, and in the absence of its usual effects on the uterine contractions, were so very rare as to be quite exceptional, and could be equally well explained by the weakened state of the child (from the previous length of the labour) at the time of giving the ergot—under which circumstances any further delay was of course fraught with imminent hazard to its existence. I fully admit that if the cases of this kind amounted to any considerable number, they might then justify an inference, which cannot, with any show of reason, be deduced from a very few solitary instances.

On the other hand, the common voice of experience proclaims that the danger to the child is in proportion to the intensity and uninterruptedness of the pains ; and that where these are only imperfectly developed by the ergot, or are distinctly intermittent, hours may elapse with impunity to the fetus.

We may look upon it, then, as sufficiently established that the influence of ergot on the fetus, after the discharge of the waters, and dilatation of the mouth of the womb, bears a due proportion to the intensity of the uterine contractions. But something further, some evidence of a synthetic kind, is wanting to prove that the *pains* and the state of the fetus stand in the relation of cause and effect. It may therefore be asked—do we ever see effects like to those of ergot produced in the fetus by uterine contractions of spontaneous origin ? To this very proper and pointed question my own experience enables me to give an affirmative reply.

It has been doubted by some writers whether powerful and continuous contractions of the uterus, such at least as ergot is capable of exciting, ever occur naturally. On several occasions, however, it has fallen to my lot to witness them, and no doubt many around me have done the same. This kind of uterine action has been, not unaptly, termed " tetanic," from the violence and persistence of the contractions. Here, then, is a case in which the pains possess the peculiar characters belonging to those which ergot excites ; and in these cases of tetanic uterine action experience shows that, quite irrespectively of the length of the labour, the infant is very apt to be dead born, unless art interfere to extract it, or to moderate the violence of the uterine contractions. For another reason, namely, the imminent risk of rupture of the uterus, we are generally obliged to give prompt assistance of some kind to the patient ; but in any case the danger to the child is very great under these circumstances, and when still-born it has presented that livid congested appearance so often observed where ergot of rye has been given. Between the two classes of cases, those

of ergotic and those of tetanic uterine action, there is the closest resemblance, *quoad* their destructive effects on the child. But this is not all. We may carry the comparison further, and we shall find that the effects on the fetal pulse, attributed to ergot, are likewise produced in the case of tetanic uterine action. I have been careful to investigate this point; and in all the cases where I had an opportunity of examining, the fetal heart was found notably diminished in strength and frequency, and at times irregular. These phenomena are identical, you observe, with those which ergotic contractions ordinarily produce. In both classes of cases the depression and irregularity of the heart's sounds were most marked immediately on the cessation of a pain. Indeed I have found it to hold good as a general rule, that the immediate effect of strong uterine contraction, after the escape of the waters, is to depress the pulse of the fetus—that is, to render the heart's sounds slower and feebler; and this fact in itself supplies us, I think, with a key to explain the mode of action of ergot upon the child.

Permit me now to recapitulate :—1. We have seen that, as a general rule, the danger to the child, after giving ergot, is exactly in proportion to the energy of the uterine contractions. 2. It is no less true that where but little uterine action is excited by the ergot, it does not seem to exercise a noxious influence on the fetus. 3. The evidence that ergot is acting injuriously on the child is derived from the cardiac sounds, which become reduced in strength and frequency. 4. The immediate effect of uterine contraction upon the fetal pulse is to produce a temporary diminution of its force and rapidity. 5. And lastly, in the few cases I have seen where violent and continuous uterine action took place from natural causes, the fetal pulse underwent the same changes as after ergot, and the children were born in a highly congested state, dead, or partially asphyxiated, unless delivered soon after the accession of these tetanic contractions of the uterus.

Of course it remains for future observers to corroborate or invalidate the facts I have adduced. But, assuming that my observations are correct and well grounded, I think it will be hard to avoid the conclusion that the action of ergot of rye on the fetus is due solely to the uterine contractions excited by this medicine.

Let me here digress for a moment. I have had occasion to speak of certain changes in the characters of the fatal heart's sounds, and to remark that in one class of cases (those of ergotic or tetanic uterine action) slowness, weakness, and irregularity are the precursors of the child's death; whilst in other cases, on the contrary (chiefly those of difficult labour), extreme frequency and weakness of the cardiac sounds are found to precede the fatal event. No doubt the mode or cause of death might account for these differences. The subject, however, is one every way worthy of being closely investigated, and I recommend it to some of my junior

brethren around me who have opportunities for prosecuting such an inquiry.

A very interesting question, originating out of what has been already stated, now presents itself to us, and it is this:—How do the uterine contractions operate upon the fetus?

There are three ways, I believe, in which the vital condition of the fetus may be affected by the pains:—1st. The umbilical cord may be subjected to direct pressure from the contracting uterus, and if this pressure be so great as to completely stop the circulation through the funis, the death of the fetus certainly and very speedily ensues. 2nd. The compression which the brain and medulla oblongata undergo, where the head is wedged or impacted in the pelvis, has been deemed sufficient to endanger or to destroy the life of the child. It is very remarkable how great a change of configuration the head may bear consistently with the preservation of the fetus. But here the change is slowly and gradually effected, whereas in the cases under consideration—namely, those of strong and continuous uterine action, the change must, if it take place at all, be effected quickly and under "high pressure." It is only when there is resistance from the hard structures that pressure on the head can be really dangerous to the child, and therefore I believe that pressure on the head is very rarely a cause of fetal death. If what I have just stated be true, it furnishes us with an instance of the occasional antagonism of maternal and fetal interests. It is desirable for the mother that the pressure of the head on the soft linings of the pelvis should be as transient as possible, but for the child it is desirable that the compression of the head by the pelvis should be slowly and gradually made. Lastly, persistent uterine contraction may affect the child by causing imperfect oxidation of its blood in the embryonic villi of the placenta.

There are the strongest anatomical and physiological reasons for supposing that the current of blood through the maternal cells of the placenta is checked during uterine contraction, so that the change in the fetal vessels from venous to arterial blood is then arrested or imperfectly performed, just as the aëration of blood in the pulmonary vessels of a breathing animal, or in the branchial vessels of a fish, is stopped when the needful supply of air or of water is withheld.

We can, then, have no difficulty in understanding why pains of a violent kind, recurring at very short intervals, or succeeding one another without intermission, must operate prejudicially on the fetus—nor why the child, when born under these circumstances, so commonly presents a congested livid appearance, and is so apt to be expelled in an asphyxiated condition.—11*th February*, 1865.

TRANSACTIONS OF THE COUNTY AND CITY OF CORK MEDICAL AND SURGICAL SOCIETY.[a]

SESSION 1864-65

Dr. John Bain, President.

Dr. Cremen read the annexed return and extracts from a letter which he received from Staff Surgeon Francis Cogan, 2nd Regiment of Infantry, stationed at Bermuda, alluding to the severity of the epidemic of yellow fever, which visited that island during the Autumn of 1864, and which exceeded the mortality of any previous epidemic, both among the inhabitants and the newly arrived troops; the authorities found it necessary to send a large number of the soldiers to Halifax, and those that remained were obliged to keep out under canvas. Dr. Cogan and three assistant surgeons were attacked, and two of the latter fell victims. Dr. Cogan's heroic services in this epidemic were the subject of the highest eulogy in the official report furnished to the army medical department by the general commanding :—

RETURN, showing the Admission and Deaths from " Yellow Fever " at Bermuda (among the troops), from the 19th July to 13th Dec., 1864.

St. George's, Bermuda, 13*th December*, 1864.

CORPS	STATION	Admitted	Died	General Total Admitted	Died
General Staff, ...	St. George's, ...	1	...	1	..
Corps of Armourers, ...	,, ...	1	...	1	...
Commt. Staff Corps, ...	,, ...	4	1	...	...
,, ...	Ireland Island, ...	2	...	6	1
Army Hospital Corps ...	St. George's, ...	7	3	...	...
,, ...	Ireland Island, ...	1	...	8	3
Royal Artillery, ...	St. George's, ...	72	20	...	...
,, ...	Fort Cunningham, ...	5	...	...	...
,, ...	Ireland Island, ...	33	9	110	29
Royal Engineers, ...	St. George's, ...	73	21	...	...
,, ...	Fort Cunningham, ...	7	3	...	...
,, ...	Walsingham, ...	5	1	...	...
,, ...	Ireland Island, ...	2	1	87	26
2nd Battalion, 2nd Regiment, ...	St. George's, ...	130	62	...	...
,, ...	Ferry Point, ...	60	17	...	...
,, ...	Ireland Island, ...	99	32	289	111
39th Regiment, ...	St. George's, ...	1	1	1	
	Total, ...	503	171	503	171

Besides the enclosed cases there were 15 officers of different departments, who died ; and also women and children.—F. C.—22*nd February*, 1865.

[a] These reports are supplied by Dr. David Cremen, M.B., T.C.D., Secretary to the Society.

Case of Nephria, with Early Symptoms of Toxemia, from Retention of Urea. By Thomas Blatherwick, M.R.C.S., Eng., Staff Surgeon 20th Depôt Battalion.

Nov. 19th, 1864.—Private J. W., 109th Regiment, aged twenty-three. This man was carried to hospital early this morning, having been unwell, by his own report, since the morning of the 17th, but it was only this morning that he felt very ill. He is now suffering from fever; skin hot; eyes suffused; much headache; no muculæ on skin; pulse 100, and sharp; he is dull and heavy; lips covered with sordes; tongue dry and brown; some delirium. His previous general health is ascertained to have been indifferent.

As fever was very prevalent in Cork, and it was quite possible that the man had been unwell for a longer period than he stated; the case was diagnosed as one of fever. He was placed in a ward by himself, a brisk emetic and purgative were given, his hair was cut off, and sinapium applied to the back of the neck.

Nov. 20th.—Free operation from the emetic and purgative; urine loaded with lithates, passed about one and a half pints during the night; tongue cleaner, but dry; pulse 90; skin still hot, and has headache; he has had no sleep and has been delirious.

Nov. 21st—Much better; tongue clean and moist; skin cool; he is free from fever; bowels not moved again; his manner is silly, and he answers questions slowly and not to the point; urine free. To be freely purged with compound extract colocynth. After this he improved rapidly, and was reported well on the 25th.

At the end of December this man again came sick with symptoms which left no doubt of his being affected with Bright's disease of the kidney. He had lost strength; he had cough, and dyspnea, occasional diarrhea, some sensation of numbness from the loins downwards; there was œdema of the feet. The urine was clear, s. g. about 1006, and loaded with albumen.

On the 12th January, while in hospital, he was attacked with suppression of urine and symptoms of blood poisoning immediately ensued; they resembled those detailed on his admission in November, with the exceptions that there was more coma and less heat of skin. He died in about thirty-six hours after the appearance of these symptoms.

On examination after death, the lungs were found slightly adherent to parietics, tubercular consolidation at apices, and scattered masses of tubercle throughout both lungs. Heart slightly hypertrophied, cavities of normal size, increased deposit of fat on its surface. The liver enlarged, rather pale, several congested spots of a purple colour, both in its substance and on its surface; weight 7lbs. Kidneys small; right kidney 4oz., left kidney 3½; both presented the external granular and mottled

appearance characteristic of Bright's disease; and on making a longitudinal section, both cortical and medullary portions were found to be extensively disorganized by the disease. No urine in the bladder.

The retrospect of this case leaves no doubt that the patient was suffering from blood poisoning, through non-diminution of urea, when admitted in November. It was remarkable that it should have occurred with a comparatively good secretion of urine, the characteristics of which, combined with the febrile symptoms and the absence of actual coma, disarmed suspicion as to the nature of the disease.—*22nd Feb.*, 1865.

CLINICAL RECORDS.

Cases of Accidental Injuries of the Uterus and its Contents during Gestation.
By JOHN RINGLAND, M.D., T.C.D., F.K.&Q.C.P., M.R.I.A.

The possibility of accidents to parturient women towards the close of their pregnancy, producing an injurious effect on their offspring, has been frequently discussed, and their results, in a medico-legal point of view, have been minutely considered; any cases tending to elucidate the subject must, consequently, be of value. I, therefore, without hesitation, submit the details of the three following, simply as clinical records, and without any comment whatever :—

CASE I.—A lady was confined, on September 3rd, 1852, of her second child, which was to all appearance strong and healthy, and did not at the time attract any special attention. On the following day the nurse directed my observation to a marked depression in the head, and on examination I found the right parietal bone fractured completely through, from the sagittal suture, directly posterior to the anterior fontenelle, to its lower anterior angle, and close to the coronal suture; the fracture was depressed, and the two portions of the bone were overlapping. I then, for the first time, learned that, but two nights antecedent to delivery, a young lady, a visitor, not being well, had entered my patient's bedroom, and, not wishing to disturb her, had seated herself on her bed. Being disturbed by the weight thus applied to her feet, my patient suddenly sat up in the bed, thus throwing her friend off her balance, and causing her to fall backwards towards the foot-board, and the consequent raising of her foot which had been swinging loosely over the side of the bed. In her attempt to recover herself she struck my patient on the abdomen, a little above the pubis, with the heel of her shoe, with the result to the

child already stated, but without any injury to the mother, who made a perfect and complete convalescence. The child required no treatment whatever, and is now more than twelve years of age, strong, healthy, and intelligent.

Case II.—On the 10th of March, 1865, another of my patients was passing across the hall of her house and fell across a perambulator, which had been incautiously placed there by a servant, and struck her abdomen severely against the back driving-rail, which caused her great pain at the time, and lasted for about two days; but, as it gradually subsided, she did not think it necessary to mention the matter to me. She was delivered, on the 13th of March, of a rather delicate child, but which, with a great deal of care, gradually improved in strength, and is now doing well with a healthy wet nurse. Its mother progressed favourably, and was perfectly convalescent on the tenth day from her confinement. On the morning of the twelfth day rigors ushered in a fearful attack of subacute hysteritis, from which she was with great difficulty rescued, and she is now almost completely recovered; but whether this severe illness of the mother, or the delicacy of the child for some days subsequent to its birth, resulted from the accident, or should be looked on as merely a sequence to it, can only be a matter of conjecture.

Case III.—The third case is that of a lady who, about two o'clock in the day of the 18th of March, 1865, in hastily passing a chair, poised on its fore feet and, permitted by its occupant suddenly to regain its proper position, came in violent contact with its back, and for a time suffered intense pain over the uterine region, but more especially a little above the pubis, where she had received the severity of the blow. She was, however, so much recovered in the course of the afternoon that she carried out her intention of going to evening service at a church adjoining her residence. Shortly after her return home, about ten o'clock, she was attacked with rigors, followed by repeated faintings, which, however, yielded to treatment, and she slept well throughout the greater part of the night; but labour pains set in about seven o'clock in the morning, and she was delivered of a dead child about half-an-hour afterwards. She had felt the movements of the *fetus in utero* distinctly up to the time of the accident, but very feebly once or twice subsequently, and not at all after she experienced the rigors. On examining the baby, some hours after its birth, I found the right parietal bone fractured, with the edges of the two fractured portions considerably overlapped.

Case of Protracted Gestation. By John Ringland, M.D., T.C.D., F.K.&Q.C.P., M.R.I.A.

It is now almost universally admitted that the ordinary term of utero-

gestation may be set down at two hundred and eighty days; but the question whether this term may or may not be prolonged, and, if so, to what extent, has frequently agitated the profession ; and eminent names appear arrayed on both sides warmly advocating antagonistic views. Great uncertainty as to the period of conception must, of necessity, exist in the vast majority of cases ; any instance, therefore, wherein the dates are undoubted cannot but be viewed as of importance. I, therefore, think it well to record the particulars of the following case, as adding an additional link to the chain of evidence already in existence bearing on this interesting and important enquiry.

Owing to a variety of circumstances there existed no possibility of the lady. the subject of this brief memoir, proving pregnant during the course of the year 1864, excepting on the 23rd of May, the 12th of June, or the 15th September. She quickened early in October following, and was delivered of a healthy, mature, and full-grown child on the morning of the 10th of April, 1865. Had pregnancy dated from the first of these periods the ordinary term of two hundred and eighty days would have expired on the 27th of February, 1865 ; dating from the second period it would have terminated on the 19th of March ; whilst, counting from the last specified period, it would not have come to a close until the 22nd of next June. The maturity of the child at its birth, as well as the period of quickening, preclude from consideration the last of these dates ; while the long interval of forty-two days between the specified time and the actual delivery combined with the occurrence of a slight catamenia period shortly subsequent thereto, dispose of the probability of pregnancy having resulted on the first of the dates noted, although the period of quickening (four months and a-half thereafter) corresponded with that at which it had usually occurred in former pregnancies. There thus remains only the 12th of June, 1864, from which to calculate, the interval between which date and that of delivery, on the 10th of April, 1865, being *three hundred and two days.*

It may not be uninteresting here to mention that this lady in a former pregnancy suffered from excessive dropsy of the amnion, the discharge of liquor amnii in enormous quantities, recurring almost daily, for many weeks antecedent to her delivery of a healthy child, now four years old ; and that, having no similar attack during the two next ensuing pregnancies, she experienced, on the 7th of February last, a discharge of a large quantity of *liquor amnii*, accompanied by irregular uterine pains, which, however, yielded to treatment, and did not recur until the 12th of March, two hundred and seventy-three days from the 12th of June, the date already specified, from which the foregoing calculation has been made.

From that time, despite all treatment, it frequently returned, at greater or shorter intervals, and in larger or smaller quantities, but always

accompanied by uterine action, which at first produced only slight dilatation of the cervix uteri. This enlargement of the os, however, continued to increase from day to day during the ensuing fortnight, on each recurrence of uterine contraction, until it had attained the size of about a half-crown piece, when no further enlargement whatever took place until the morning of her delivery. No untoward event followed the excessive and continued discharge of liquor amnii in either the present labour of this lady or in the former one already alluded to.

Cases Treated at the Dispensary for Skin Diseases, Bishop-street. By T. W. BELCHER, M.D., Dubl.; Fell. R. Coll. Phys., Irel., &c.

In the February number of this Journal I detailed the particulars of four cases, in two of which arsenic was used, while in the other two iodine was the chief curative agent.

In continuation, I now propose to give particulars of six cases, which, as in the former paper, I shall name according to Neligan's classification. I adopt this classification because it, in the main, follows that of Willan and Bateman, and is sufficiently understood for purposes of identification by the profession in this country. Notwithstanding the chaos of classifications constantly issuing from the press, I am persuaded that Willan's arrangement, adapted to our present state of knowledge, is now the best, for the simple reason that it, and it only, is everywhere understood.

Case 5.—J. B., a girl, aged nine, was admitted November 9, 1864, affected with *ecthyma chronicum.* Her parents are English operatives, who lately came from Bristol to reside in this city, and her cachectic condition under her present altered diet and mode of life explains her case sufficiently.

The eruption is sparsely scattered over the limbs and body, and the general appearance of the case is just as described in Dr. Neligan's "Diseases of the Skin," page 176. She was directed to take alterative powders of mercury with chalk, and rhubarb; to take a warm bath, and then rub in an application which I may shortly call "Hebra's tincture," or, in pharmaceutical phraseology, *tinctura saponis mollis cum pice.* This preparation, recommended and much used by Professor Hebra, of Vienna, consists of equal parts of soft soap, tar, and methylated spirit. I have found it a most effective remedy, and I shall have further occasion to refer to its use.

Nov. 18.—She is much improved; directed to stop the alterative powders, continue Hebra's tincture, and take one drachm of cod-liver oil thrice daily.

Nov. 22.—Slightly improved.

Dec. 2.—Much better; stop Hebra's tincture, but continue the cod-liver

oil. The eruption has nearly disappeared, and her general health is greatly altered for the better.

Dec. 6.—Almost well. Shortly after she was discharged. I look on the disease in this case as one of constitutional origin; local treatment was necessary, but could never cure it.

Case 6.—E. B., aged about twenty-five, a sempstress, admitted 6th Dec., 1864, with an eruption of some weeks' standing on left ear and forehead, and under left arm. This I consider to be a case of *eczema impetiginodes*; and as in most points it resembles Case 3, detailed in the last number of this Journal, I need not describe it further. She was directed to apply dilute citrine ointment to the eruption, and to take a senna draught.

Dec. 9.—General appearance improved. Tincture of iodine, made as noted in Case 3 (*D. Q. J. M. S.*, Feb., 1865, p. 253), was applied to the affected parts, and she was directed to take powders of mercury with chalk, and rhubarb. Here it would have been desirable to give cod-liver oil, but her stomach would not bear it, and had before frequently rejected it.

Dec. 13.—Better. Repeat the iodine application. She now finds that, by beginning with very small quantities, she can use cod-liver oil.

Dec. 16.—Better; but she has now two enlarged glands in the neck, to which, as well as to the eruption, the iodine was applied. She now takes cod-liver oil freely.

Dec. 20.—Much improved.

Dec. 27.—The eruption has almost disappeared, while she has continued the former treatment.

Dec. 30.—I look on her as now cured. Discharged. This was a case of plainly strumous origin, and, in my opinion, could never be cured with merely local treatment.

Case 7.—T. W., a female, aged twelve, admitted 30th Dec., 1864, with two patches of herpes circinnatus (ringworm) inside the left arm, and one on the right shoulder. She had the tincture of iodine, before described, applied to the diseased surface, and got powders of mercury with chalk, and rhubarb.

3rd Jan., 1865.—Better; continue the treatment ordered 30th Dec. 6th Jan.—Better. 10th Jan.—Better; continue application of iodine; stop powders, and take one drachm of cod-liver oil thrice daily. 17th Jan.—Much better. 20th Jan.—Improved. 24th Jan.—Eruption almost gone. 27th Jan.—Nearly well. 3rd Feb.—Discharged cured. This case also shows the value of constitutional treatment.

Case 8.—M. B., a female, aged six; has lately recovered from scarlatina, and is now partly deaf; admitted 10th January, 1865, with well

defined and amply developed *porrigo favosa* (scall head). In this case I may roughly describe the superficial extent of the disease by saying that it covered the occipital hemisphere of the head. There was no mistake about its mousy odour. The crusts had disappeared before I saw it, and it was in the stage of "mealy powder" described by Dr. Neligan. That writer states these cases to be rare in Ireland, and says that in his experience (which was extensive) he had only met with twenty-three instances of it. I must refer the reader to his treatise for the very interesting account there given of this strange affection, particularly as regards its vegetable nature; and I may just state that, by the kindness of Drs. Buchanan and M'Call Anderson, I saw, last year, at the Glasgow Dispensary for Skin Diseases, an unmistakable proof of the statement that this disease attacks mice, in the person of a deceased member of that industrious family. In the present case I directed the head to be poulticed, to cut off all the hair as closely as possible, and afterwards to apply Hebra's tincture. The poultice was repeated up to 24th January, when, the disease being very much better, tincture of iodine was applied to it, and on the 27th she commenced taking cod-liver oil. This she did, continuing the iodine, up to 10th February, when she was discharged. I saw her a few days ago (March 31, 1865), and she has now as clean a scalp and as good a head of hair as any one may desire.

Case 9.—A. R., a female, aged nine, admitted 14th February, 1865, with *porrigo favosa* of the same superficial extent as in the preceding case, but of six months' standing, and much worse in every way. That dirt was a congenial soil was evident, as the child's head was alive with vermin. To kill these gentlemen being the first object, the head was covered with Hebra's tincture, which accomplished this end, and so clotted the scabs that, by diligent poulticing and the use of the scissors, the scalp was cleared off, and then tincture of iodine was applied up to 10th March, when she was discharged cured. I saw her on the 31st March, in as good condition as Case 8. I may add that the application of Hebra's tincture, with poulticing and the use of the scissors, in these cases answered every purpose of the " pitch cap," without its barbarity; and, although epilation was not resorted to, the hair grew well and quickly.

Case 10.—C. H., aged thirty, married, a shoemaker; had syphilis about twelve years ago, and was admitted 17th January, 1865, with a patch of what I consider *syphilitic eczema* on the right hip. This patch is about twelve inches in circumference. Beside the application of tincture of iodine to the affected part, this man took a mixture containing iodide of potash up to the 10th March, when he was discharged cured. As in this so in other cases, where there was a fair presumption of the skin disease being of syphilitic origin, I have never found this ordinary plan of treatment to fail.

Hospital Notes from Co. Londonderry Infirmary. By T. H. Babington, M.D., T.C.D., Surgeon to the Infirmary.

REPORT OF INFIRMARY AND FEVER HOSPITAL FOR 1864.

Return of Patients Admitted into the City and County of Londonderry Infirmary, during the year 1864.

Patients remaining under Treatment, January 1, 1864, ...	60	
Admitted, ...	646	—Total, 706
Discharged cured, or relieved, ...	549	
,, irregular, ...	9	
,, at own desire, ...	40	
,, incurable, ...	5	
Died, ... , . . .	50	—Total, 653
Remaining 1st January, 1865, ...	53	
Number of Beds in Hospital, . Male, 48 ; Female, 24—Total, 72		

City Fever Hospital.

Remaining 1st January, 1864, ...	22	
Admitted,[a]	214	—Total, 236
Discharged cured, ...	187	
Died,[b]	23	—Total, 210
Remaining 1st January, 1865, ...	26	

[a] Including 10 cases Smallpox, 1 Scarlatina, and 6 Measles.
[b] Three deaths from Smallpox.

Number of Beds in Fever Hospital . . .	32	

	£	s.	d.
Average Cost of Hospital and Fever Patients, including all expenses, ...	£1	16	9¾
Average Cost of Hospital and Fever Patients, exclusive of Salaries, Wages, and Annuity, amounting to £501 1s. 1d., .	1	6	2
Daily Cost of each Patient, including all expenses, . .	0	1	6¼
Daily Cost of each Patient, exclusive of Salaries, Wages, and Annuity, amounting to £501 1s. 1d., . . . , .	0	1	1½

Total Number of days passed by Patients in Hospital, . .	16,766
,, ,, ,, ,, ,, in Fever Hospital .	5,218

Numerical Abstract of Cases of Accidents and Diseases admitted in the

Year 1864.

ACCIDENTS.	No. of Cases.	ACCIDENTS.	No. of Cases.
Burns and Scalds, . . 8		Fractures of Clavicle, . . 9	
Dislocation of Hip, . . 1		Fracture of Leg, . . 7	
„ of Shoulder,. . 4		Compound Fracture of Leg . 1	
Fractures of Forearm, . . 10		Fracture of Thigh, . . 3	
„ of Humerus, . . 2		Injuries of Head, . . 8	
„ Compound of Humerus . . 2		General Injuries, Wounds, Contusions, and Sprains, . 77	

DISEASES.	No. of Cases.	DISEASES.	No. of Cases
Abscess, ... 22		Glossitis, ... 1	
Ague, ... 2		Hydrocele, ... 1	
Albuminuria, . . . 8		Hernia, ... 2	
Anemia, . , . . 5		Hemorrhoids, . . . 3	
Aneurism of Aorta, . 1		Hemorrhage, from Varicose Ulcer, ... 1	
Anthrax, . . . 1		Excessive Intoxication, . 2	
Bronchitis, . . . 49		Lupus, ... 5	
Cancer of Breast, . . 2		Menorrhagia, . , . 4	
„ Face, . . 3		Paronychia, . . . 3	
„ Inguinal Glands, . 1		Phthisis, ... 45	
„ Lower Jaw, . . 1		Phlebitis, ... 2	
„ Hand, . . 1		Pleuritis, ... 14	
„ Lip, . . 3		Pleurodynia, . . . 5	
„ Penis, . . 1		Pneumonia, . . . 7	
„ Pylorus, . . 1		Poisoning by Oxalic Acid, . 1	
Catarrh, . . . 14		„ by Deadly Nightshade, ... 1	
Cynanche Tonsillaris, . . 5			
Club Foot, double, . . 1		Rheumatism, . . . 36	
Contraction of Fingers from a Burn, ... 1		Retention of Urine, . . 4	
		Skin Diseases, . . . 25	
Diabetes, ... 3		Struma, ... 6	
Diseases of Brain, &c., . 21		Syphilis, ... 12	
„ of Eye, . . 20		Stricture, ... 2	
„ of Heart, . . 10		Tumours, ... 11	
„ of Prostate Gland, 3		Do. Malignant of L. Jaw, . 2	
„ of Stomach, &c., . 62		Ulcers, ... 48	
„ of Testicle, . 4		Malingerers, . . . 7	
„ of Uterus, . . 5		Fever, ... 197	
Dropsy, ... 10		Small Pox, . . . 10	
Epilepsy, ... 1		Scarlatina, . . . 1	
Epistaxis, . . . 3		Measles, ... 6	
Fistula in Ano, . . . 1			
Gangrene, ... 1			

Diseases or Injuries which caused the Death of the Patients.

	No of Cases.		No. of Cases.
Apoplexy,	1	Hemoptysis,	1
Anemia,	1	Injury of Head,	2
Albuminuria,	2	Pneumonia,	2
Bronchitis,	4	Phthisis,	12
Burns and Scalds,	3	Paralysis,	1
Epilepsy,	1	Peritonitis,	1
Erysipelas of Head,	1	Stricture and Infiltration of	
Debility and Wasting,	3	Urine,	1
Compound Fracture of Arm,		Ulceration of Bowels,	1
&c., requiring Amputa-		Disease of Liver,	2
tion,	1	Rupture of Uterus,	1
Gangrene,	1	Malignant Disease of Testicle,	1
Heart Disease	5	Cancer of Tongue,	1
Hectic Fever,	1	Fever and Small Pox,	23

OPERATIONS.	No.	OPERATIONS.	No.
Amputation of Breast,	1	Amputation of Penis,	1
,, Shoulder Joint,	1	For Club Feet,	1
,, Forearm,	4	Removal of Cancerous Lips,	3
,, Arm,	1	Removal of Tumours,	2

A number of Minor Operations, as Amputations of Fingers, &c.

1. *Compound and Comminuted Fracture of Hand, Forearm, and Arm; Amputation at Shoulder Joint; Death.*—Ellen Logue, aged 18, worker in a flax mill; a portion of her dress caught in the machinery; her hand and arm were dragged into the rollers. Seven hours after the accident she was received into the hospital. Her hand, forearm, and arm, to a considerable distance above the elbow were lacerated, fractured, and the bones, I may say, pulverized; a large wound extended into the axilla, and the head of the humerus was split. The deltoid muscle remained uninjured. It was considered expedient to remove the limb at the shoulder joint, which was readily accomplished by making a good-sized flap of the uninjured deltoid muscle, turning it up, opening the joint, and passing the knife close behind the bone, and dividing the arteries, nerves, and other attachments. There was scarcely any hemorrhage, and the axillary artery was plugged with a clot above an inch long.

She was admitted on the 30th January, 1865, at eight o'clock, p.m. She progressed most favourably till the night of the 4th February, when she was attacked with irritative fever, wild delirium, followed by great nervous prostration, and died on the 5th February.

I was kindly assisted in the operation by my friends, Dr. W. Rogan, Medical Superintendent of the Lunatic Asylum, and Dr. Joseph Browne, R.N.

2. *Compound Fracture of Humerus.*—E. Evans, a Welsh sailor, aged 18. His vessel was caught, off the coast of Scotland, in the violent gale which raged on the afternoon of Sunday the 31st July, 1864 ; he fell from some part of the rigging, and fractured his right humerus ; the end of the bone protruding through the skin. The following day, in the afternoon, the vessel got into Lough Swilly, and he reached the infirmary on Tuesday evening.

The nature of the injury was too evident, the lower end of the humerus was protruding about one inch and a-half through the deltoid muscle and skin, and tightly held there ; the arm was a good deal swollen. He was placed under chloroform. Some gentle efforts to reduce the fracture having failed, I, with Butcher's saw (the cutting edge turned inwards), sawed off the protruding portion of the bone, and adjusted the limb. He had some smart irritative fever for the first week ; afterwards he suffered very little pain, and he left hospital on the 12th September, with a very useful limb, and free use of the shoulder joint.

I have since had a letter from him, from Wales, expressing his gratitude, and telling me what a good arm he has.

3. *Rupture of Uterus.*—Jane Cook, aged 40, mother of 11 children, now pregnant, admitted August 26, 1864 (Friday), stated that on the Monday before, while lifting a tub full of meat for cows, she felt a sudden pain in her belly ; this continued ; she was within a month of her confinement, and she thought her labour was coming on ; she got some aperient pills, which she said operated, and afterwards some anodyne mixture ; not getting better, she came into hospital. On admission there were no symptoms of labour, although she said she had a discharge from the vagina. On examination the os uteri was closed, and there were no labour pains, nor was there any discharge.

Her abdomen was enormously distended, and very tender ; she could not lie down ; her pulse was very small and rapid ; the fetal heart could not be heard—she was evidently in a most dangerous condition, and sinking. She was ordered a grain of opium every four hours, and an enema thrown up with the long tube. She experienced no relief, and gradually sunk, and died at half-past eight o'clock, p.m., on Sunday, the 28th. Being in the Hospital when she died, I had the body at once removed to

the dead house, and opened the abdomen, in hopes of saving the child; the cavity was enormously distended with gas and fluid. I found the uterus ruptured all across the fundus, and the child lying dead in the abdominal cavity.

4. *Dislocation of Hip into Foramen Ovale.*—James M'Canon, aged 11, while playing with some other boys, was tossed over a ditch. He complained of pain in his hip, but received no attention. He was received into hospital six days after the accident. It is unnecessary to detail the appearances of the limb.

Having placed the patient under the influence of chloroform, and kept up extension and counter-extension, drawing the limb across the other, on releasing the appliances we found the limb restored to its normal position, but without any snap.

5. *Strangulated Hernia, &c.*—J. H., aged 40, has a hernia for which he wears a truss; he is careless about it; it often comes down, and he has a good deal of trouble getting it up again; so far this is his own report. He came into the hospital on Tuesday the 14th February. He stated that the hernia came down on Sunday night, remained down all night; he used a good deal of force to get it up, and that on Monday "he got it up." He vomited a great deal, and had intense hiccup. He sent for Dr. Browne, dispensary surgeon, who sent him to the hospital.

On admission, he complained of great abdominal pain, particularly about right iliac region (the hernia was on right side); the pain was increased on pressure. He had severe vomiting, (stercoraceous) hiccup and thirst; no tumour in the groin, no evacuation from his bowels since Sunday. Leeches were applied, fomentations, opiate draughts with chloric ether, a large enema administered, and a blister applied to the epigastrium. Pills of calomel, aloes, and extract hyosciamus, administered every two hours, with a view to act on the bowels.

This treatment was steadily pursued for twenty-four hours, but without the slightest amendment. He was then ordered a grain of solid opium in a pill every third hour, and a large enema, of gruel with turpentine, administered with the long tube, twice in the twenty-four hours.

After persevering steadily with this course of treatment for six days, and at times dreading an unsuccessful termination, I had the satisfaction of finding, on the evening of the sixth day, a large fecal evacuation.

After this the doses of opium were gradually diminished, and the man perfectly recovered, and was discharged, with a well-fitting truss, and a warning to look after it.

He refused to be operated on for the radical cure.

The Prevention of Scrofulous Affections by Dietetic Management. By Henry S. Purdon, L.R.C.S.I., Belfast.

From the year 1846 to 1862 the deaths from phthisis amongst the inmates of the Ulster Institution for Deaf, Dumb, and Blind, at Belfast, averaged yearly from five to six per cent.

Various plans of treatment had been tried for the purpose of preventing the ravages of scrofula, but without any success. In the year 1862 it was determined to try linseed, as in the manner hereafter mentioned, it being well known to contain a large amount of oil, and excellent nutritive matter for producing fat, as is to be seen in cattle fed on this substance.

In the year 1862, as before mentioned, linseed was first tried as a dietetic agent, combined with bran. Now, it has been estimated that as much as twelve per cent. of nutritious matter is contained in bran, and this matter is commonly called by chemists gluten ; but M. Mège Mouries has found this substance to consist of a vegetable ferment, or metamorphic nitrogenous substance, and which he has named *cerealin*, and another vegetable substance *caseine*.

Cerealin, which I may call the active principle of bran, is obtained by washing bran with cold water, in which fluid it readily disolves, and may be precipitated by alcohol. As contained in bran it is an active ferment on starch and glucose, producing the lactic and butyric changes, but never alcohol.

This substance, then, being a special solvent of starch and gluten as contained in flour, and a good stimulant, as also tonic, to weakened digestion, it increasing to a remarkable extent the dissolving properties of pepsine, was, on account of these reasons, combined with linseed, as in the following formula for one quart of the soup :—Take of linseed, one to two ounces ; fine bran, one ounce ; water, one quart. Boil for two hours, and strain ; then add beef, one to two pounds, and make into a soup, with vegetables, groats, &c.

This soup is given at dinner, five days in the week, to the inmates, and has now been in constant use for upwards of two years—the deaths from phthisis during the last two years being only one in number ; bronchial and dyspeptic attacks, also, are not so frequent as formerly.

Another article of diet, which is very useful in scrofulous children suffering from derangement of the digestive organs, is arrow-root (*Maranta Indica*).

Year	INMATES		Deaths Mutes	Deaths Blind
	Mutes	Blind		
1864 -	105 -	21 -	—	- —
1863 -	— -	— -	1 from phthisis -	1 from hydrocephalus
1862 -	102 -	17 -	5 „	- —

Year	INMATES			Deaths Mutes			Deaths Blind	
	Mutes		Blind	Mutes			Blind	
1861	- 105	-	18	-	1	from phthisis	-	1 from phthisis
1680	- 99	-	14	-	2	,,	-	— ,,
1859	- 94	-	13	-	3	,,	-	— ,,
1858	- 91	-	13	-	3	,,	-	— ,,
1857	- 83	-	10	-	3	,,	-	— ,,
1856	- 73	-	13	-	2	,,	-	— ,,
1855	- 64	-	14	-	2	,,	-	1 ,,
1854	- 68	-	15	-	—	,,	-	— ,,
1853	- 59	-	12	-	1	,,	-	— ,,
1852	- 40	-	9	-	4	,,	-	1 ,,
1851	- 48	-	10	-	3	,,	-	1 ,,
1850	- 45	-	14	-	3	,,	-	1 ,,
1849	- 46	-	14	-	4	,,	-	— ,,
1848	- 47	-	19	-	1	,,	-	— ,,
1847	- 50	-	11	-	2	,,	-	1 ,,
1846	- 52	-	20	-	1	,,	-	1 ,,

In 1859 and 1858 there was a considerable amount of bronchitis and scrofula, and several children were obliged to have cod liver oil, but since 1862 the health of the inmates has greatly improved. These returns are below the average, as several children are sent home to their relations, and we have no means of ascertaining that they recover.

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1. The British and Foreign Medico-Chirurgical Review. Churchill.
2. The Edinburgh Medical Journal. Oliver and Boyd.
3. The Retrospect of Medicine. Edited by W. Braithwaite. Simpkin and Co.
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5. Pharmaceutical Journal. Churchill.
6. The Lancet.
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10. The Asylum Journal of Mental Science. Churchill.
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33. Bulletin de l'Académie de Médecine. Paris: Baillière.
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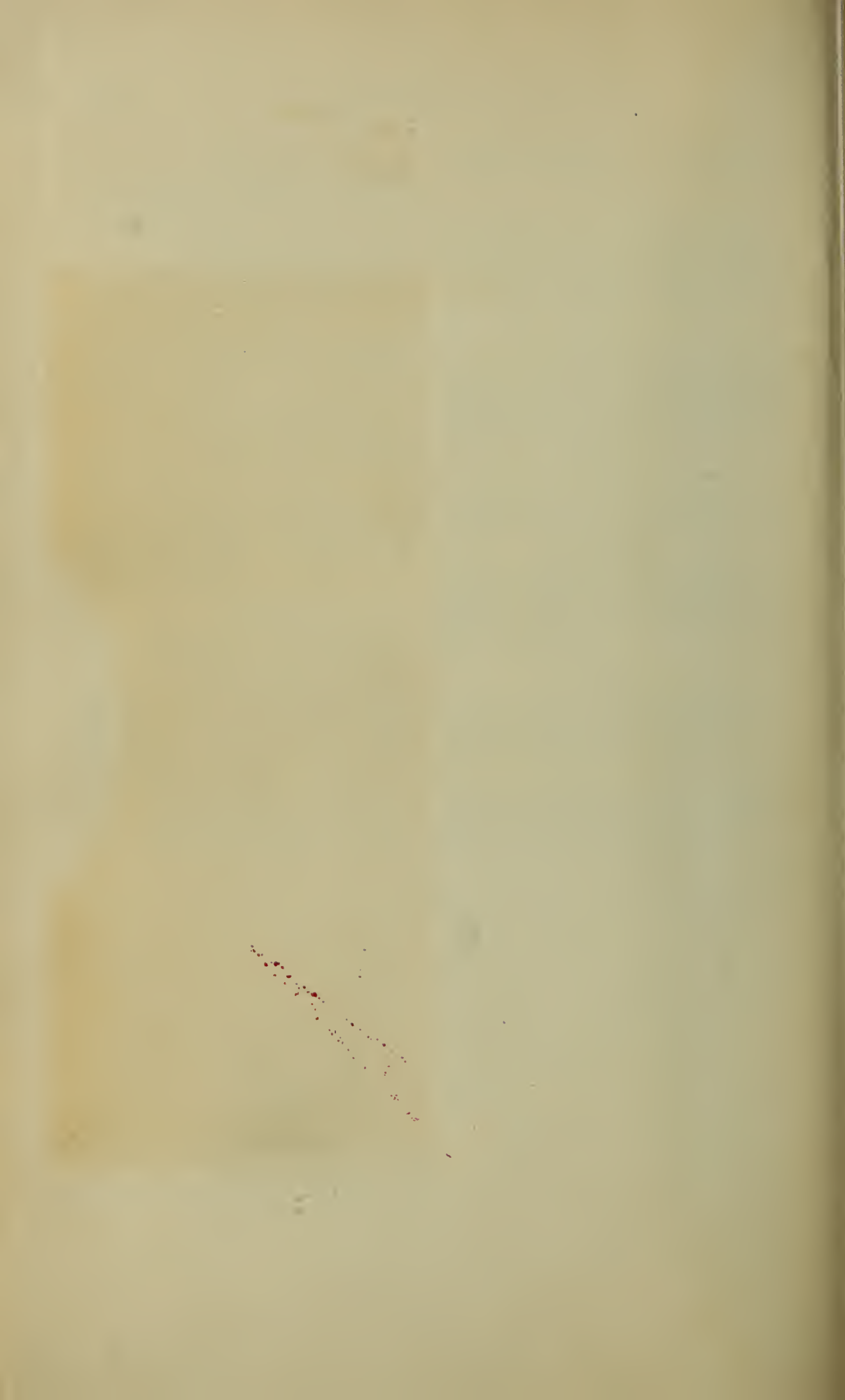
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